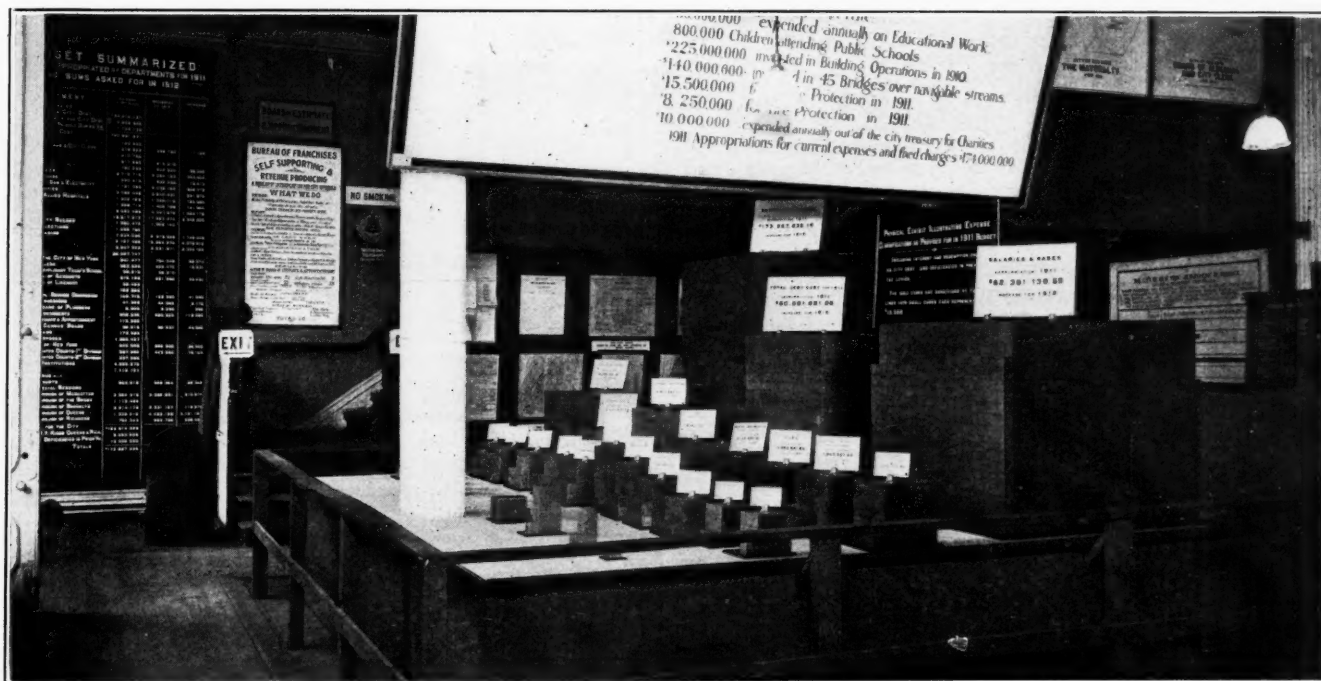


Municipal Journal

VOLUME XXXI.

NEW YORK, OCTOBER 18, 1911

No. 16



MODELS USED TO REPRESENT FINANCIAL SUBDIVISIONS OF THE BUDGET

NEW YORK MUNICIPAL BUDGET EXHIBIT

Second Annual Exhibit—More Carefully Prepared Than the First—More Facts, Less Popular Display, the Aim—Models, Charts, Placards and Photographs—Figures Translated by Cubes

THE second annual Budget Exhibit of New York City was opened on October 1 to the citizens by Mayor Gaynor in the same building on lower Broadway where last year's exhibit was held, and it will remain open throughout the month. In general the exhibit is similar to that of last year. The fact that 800,000 persons visited it last year has convinced the city authorities of its usefulness as an educational institution. The present exhibit is referred to as the "second annual," as if there were no doubt that there would be an exhibit every year in the future. It is possible that the material collected may become a part of a permanent municipal exhibition, the establishment of which is being seriously discussed. Further evidence of its usefulness was the fact that a number of cities throughout the country followed New York's example and held budget exhibits which were favorably commented on in all cases.

The first budget exhibit was gotten together rather hastily,

and, as would naturally be expected, the second is an improvement on the first. Profiting by the first experience, a more perfect managing organization was formed and more time given to the work. The expense was no greater than before—\$25,000, of which \$3,000 in one lump went for rent. The managers consider the sum quite inadequate for the sort of an exhibition which they would like to get up and which they believe would be a good investment for the city.

In the last part of March the first step was taken by the Board of Estimate and Apportionment which, in a resolution, requested the Committee on Budgetary Publicity, which had in charge the budget exhibit of last October, to continue its organization and prepare a similar exhibit for this year—that is, for the budget of 1912. This committee is composed of George McAneny, president of the Borough of Manhattan; William A. Prendergast, comptroller, and J. P. Mitchell, president of the Board of Aldermen. This committee appointed a budget

exhibit committee to take immediate charge. R. B. McIntyre, of the Department of Finance, was made chairman of this committee. The first act of the Budgetary Publicity Committee was to send a notice to every city department and bureau to appoint some one person as a representative to deal with the general committee. Seventy-five such representatives were selected. In this way a greater uniformity of exhibits was secured than prevailed the first year. Among the general instructions given to the departments was the following:

Care should be taken to avoid the subordination of essential budgetary facts by a preponderance of physical exhibits. Exhibits of the output of departmental labor should be restricted to types and if of a perishable nature should be preferably shown by photographs. In each case a clear explanation of the relation of the budget to the physical exhibit should be attached thereto. Exhibits of supplies or articles purchased must bear tags or cards indicating the unit cost of the article and the quantity used. It is suggested that such exhibits be limited to the more important items of supplies expenditure. The display of cumbersome apparatus should be avoided or restricted to photographs unless the same is of an unusual character or represents an improvement in methods resulting in budget economy, in which case a statement of the same proposed or actually effected should be made.

A statement of the quantity of work accomplished should accompany the statement of expenditure therefor and wherever possible the relation between the two should be shown by unit cost figures.

The first impression received by the visitor is distinctly different from that made by last year's exhibit. Facing the visitor as he enters the building are two large platforms containing a number of rectangular geometrical models. It is seen at once that these are composed of units consisting of cubical blocks 2 inches square. A placard states that the objects represent budgetary expenses, each cube standing for the sum of \$10,000. Most of the cubes are gilded, more clearly to convey the idea of money. It might have been added that each cube is about one-sixth of the actual size of a block of gold that would be worth \$10,000. Some of the cubes are purple. These represent the increases asked for in the 1912 budget, the gilded cubes representing the actual expenses of the 1911 budget. The largest figure, composed of the total number of unit cubes, represents the total budget expense of \$174,000,000 for 1911. The other figures represent the expenses of the different departments of the city government. A small card leaning against each figure indicates the department and the amount of money which it receives. As stated, these geometrical figures occupy two platforms. The second of these represents budgetary expenses distributed in a sort of functional way, as required by law. The items of this distribution are salaries, fuel, sta-

tionery, etc. The distribution is interesting though not exactly what might be desired. However, a distribution in accordance with the United States census recommendations would hardly be possible, except at a much greater expense than could be allowed.



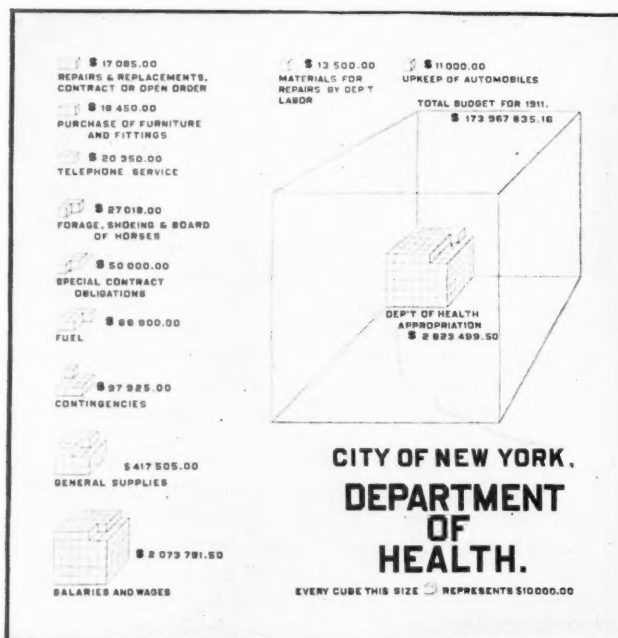
PART OF BOARD OF HEALTH EXHIBIT

Contrasted with the appearance of the entrance of last year's exhibit, the impression is much more business-like. The main feature is truly a presentation of budgetary expenses made in an attractive way, easy to understand and absolutely accurate. Last year at the front of the hall and in the windows, where it could be seen from the outside, was an exhibition of defective weights and measures. This served a useful purpose at the time, as it was not known how much interest would be taken in the exhibit and this, no doubt, attracted many people. Now that public interest is assured no such device is necessary.

The display of budgetary expenses by means of the cubes is a part of the financial department's exhibits, which consist, for the most part, of charts. Allied to the financial department is the commissioner of accounts, who has a striking exhibit. A large ledger composed of placards is placed on a raised desk. A searchlight above in front throws its rays on the book, the scheme carrying out, perhaps, the idea that the bureau is the "mayor's eye." An attendant turns over the placards, on which are stated the results of various researches made by the commissioner.

These exhibits are all in the center of the main floor, opposite the door. As the visitor moves about he notes various other differences between this year's exhibit and that of last year. The color scheme is different. Last year the burlap used for screens and background was of a deep green color, quite conspicuous. This year it is a light brown, very soft in tint. It hardly creates any impression of color at all, but is simply a background. The improvement is decided. Another change is the widening of the passageways or aisles and consequent narrowing of the sections screened off for the different exhibits. The passageways are apparently about as wide as the total space screened off on both sides. This is another improvement in detail to be credited to the management. There is a greater uniformity in photographs and placards than before, both as to size and mounting. Physical objects are less conspicuous and are better selected. They are not crowded together so as to create an impression of confusion as formerly. Everything which it is thought worth while to exhibit is given a fairly good chance to be seen. There are fewer direct appeals for more money than last year, though these are not wholly lacking.

An attempt to describe the whole exhibit as it is presented is not possible within reasonable space, and the peculiarities of the organization of the city government are such that the



GRAPHIC REPRESENTATION OF DEPARTMENTAL EXPENSES

result would be confusing. Hence some of the interesting things will be noted under classifications more generally prevailing.

The mileage of streets, which totals about 5,000, is represented graphically and by figures. The paved streets and the kinds of pavements are similarly stated. The Highway Department of the Bronx shows an interesting series of sections of pavement cut from its experimental road. The sections are sawed so as to show a plane surface passing through the stones of bituminous concrete. Contrasted with these is a section of standard sheet asphalt. There are also samples of road oils, emulsions and paving materials. The Richmond Bureau of Highways shows an excellent model of its standard concrete catchbasins in which the inlets to the basin are gulleys left in the concrete of the curb and sidewalk. The Brooklyn Bureau of Highways shows photographs and data relating to its municipal asphalt plant and proudly relates that whereas asphalt pavements once cost nearly 7 cents per square yard per year for maintenance they now cost less than 3 cents. This looks like a possible tip to the other boroughs.

The many phases of the sewerage question are shown by numerous bureaus. Most general of all is the exhibit of the Metropolitan Sewerage Commission, which tells the visitor by means of a placard that either the sewage should be kept out of the water of the harbor or bathers should be kept out of it. Plans of general sewerage systems for the whole city, which have been worked out but condemned as too expensive—about \$150,000,000—are shown. The work done by the commission, which has already been described in a number of articles in the MUNICIPAL JOURNAL, is shown in placard and photograph. Photographs by various bureaus show heavy construction work in Brooklyn and the Bronx. Drawings show the design and size of some of the large sewers. The cost of

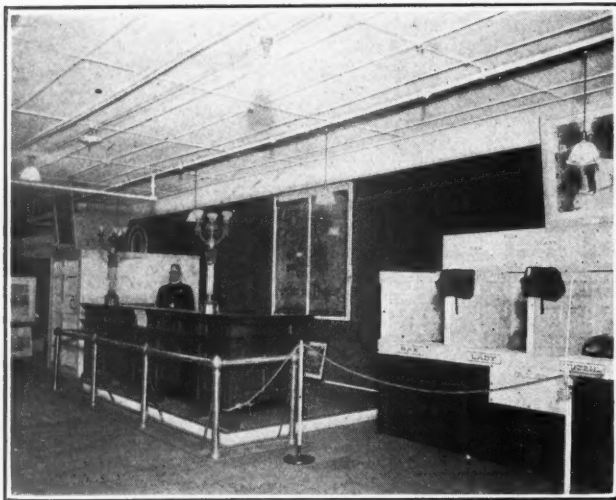


PHOTOGRAPH OF DESIGNS PASSED ON BY ART DEPARTMENT

sewer cleaning seems to be of unusual interest at this year's exhibit. Detailed costs are worked out, methods of operation explained and some causes of obstructions illustrated. One drawing shows how sticks caught against a joint in the top of a sewer and accumulating other material gradually cause an obstruction. Mileage and costs are shown in figures and diagrams by all the bureaus having charge of sewers. Photographs of sewage disposal plants, of which the city operates a number, are shown and the need for more of them explained. Perhaps the biggest sewerage improvement of the year, the purification of the Gowanus canal in Brooklyn, is shown by plans



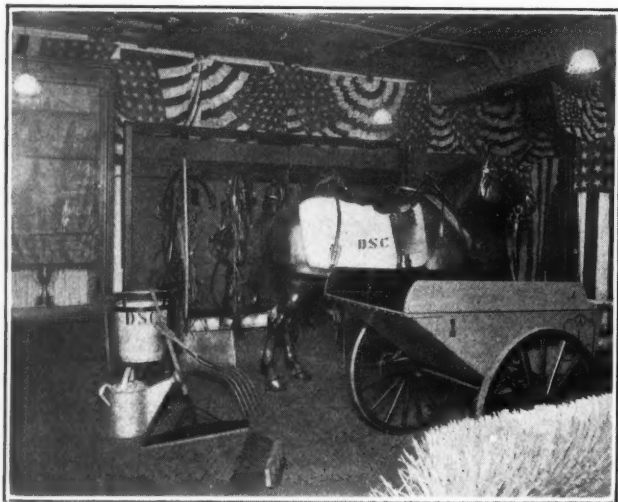
PHOTOGRAPHS AND MODELS ILLUSTRATING WATER SUPPLY, CONSUMPTION AND ANNUAL CASH COLLECTIONS.



POLICE DESK, FULL SIZE—POLICE DOGS

and pictures. Details of sewerage management in Richmond borough which were recently described in the MUNICIPAL JOURNAL, are shown by the photographs used in that article.

The deficiency in rainfall during the past three years supplies the theme for the most prominent of the water works exhibits. The Board of Water Supply gives the records of the reduction in consumption effected by its inspectors in the Water Waste Department. The quantity of water on hand in the storage reservoirs day by day is represented by colored water in a tall glass tube, the whole tube representing the total storage capacity. This is shown in one of the illustrations. The model of the Metropolitan building, the tallest one in the city, and the rods beside it, also shown in the same cut, are used to give an idea of the extent of the transactions of the Water Department. The rods represent piles of \$20 gold pieces. The total collections of the department for the year



STREET CLEANING DEPARTMENT EQUIPMENT

1911 equal more than seven and one-half piles of double eagles as high as the tower. Models of the Croton dam and several structures of the Catskill supply are shown. The construction photographs of the Board of Water Supply form the finest and most remarkable collection in the whole exhibit.

The High Pressure Bureau has an ingenious model. In front of a model of a high building three streams of water are thrown by miniature nozzles, one representing a stream thrown by ordinary hydrant pressure of 35 pounds, one by a steam fire engine working at 110 pounds pressure, and a stream from the high-pressure service. The difference not only in height but in the quantity of water thrown is easily seen.

Both street lighting and the lighting of public buildings is demonstrated in a number of ways. The economy of the mantle

light is shown by mantle and open flame burners, each using gas running through a separate meter, the two side by side in plain sight. Models in metal about 2 feet high show the different kinds of street lamp poles in ordinary use, the designs of which have been approved by the art commission. The latest of these, for arc lights to be placed in the center of a parked street, is the double cross-arm.

In the basement of the building are the exhibits of the Fire, Police and Street Cleaning Departments, which display heavy objects. These exhibits do not differ very much from those shown last year. The Fire Department has a high-pressure auto hose wagon and a gasoline fire engine. The Police Department shows a handsome desk of the type used in precinct houses, which, after the show, will be installed in one of the new stations. One of the illustrations shows this and also a full-sized steel cell. Several of the police dogs are exhibited in kennels, shown on the right in the illustration. Cards, conveniently placed, give the actual record of these dogs in assisting in catching criminals. A large map of the city shows the disposition of night patrolmen, according to the new system of stationary posts.

MEASURING ABSORPTION OF OXYGEN

Editor MUNICIPAL JOURNAL AND ENGINEER,
239 West 39th Street, New York City.

DEAR SIR:—I have just read with some interest a communication from Mr. Harry W. Clark entitled "Measuring Absorption of Oxygen," which appeared in your issue of October 4th. Mr. Clark there takes exception to a statement made by me in the report presented by Col. William M. Black and myself to the Board of Estimate and Apportionment of New York City, in which I discuss a method for determining the "relative stability" of sewage. Mr. Clark's communication is based upon a brief summary of our report which appeared in an earlier number of your Journal. Unfortunately Mr. Clark has not yet had occasion to look over our full report and a careful re-reading of the published summary convinces me that his position is entirely justified by the statements which he finds there. The summary refers to the method of determining relative stability, stating that this method was devised for our own work and used here for the first time. There then follows a description of the analytical portion of the method which, as Mr. Clark justly points out, has been in use in many places and for many years, and which so far as my information goes he was doubtless the first to use. A reading of the full text of the report in question will make it evident that the important part of this method was omitted from the summary. The mere determination of oxygen reduction in a mixed sample of sewage and water in one definite proportion and during a limited period of observation gives by itself no definite information as to the course of deoxidation in a stream at some other degree of dilution and through other intervals of time. Some years ago I published a discussion of this matter in which the term "relative stability" was first employed and in which as the result of several thousand observations I deduced the relationships obtaining between the character of sewage, concentration and time and by means of which one is able to state a single relative stability coefficient for any given sewage. From this coefficient and the laws of the chemical reaction which I established at that time it is possible to determine the full course of this reaction at any concentration of sewage and throughout any period of time. The working details of this method were developed during the New York investigation. It is this quantitative analysis of the problem and this method of stating the results in a relative stability coefficient to which I referred when I stated "a more delicate method for obtaining the same information and one which was devised by this work and used here for the first time is the following."

Yours very truly,

EARLE B. PHELPS.

We are glad to publish Mr. Phelps' statement explaining just what constituted the novelty which he claimed for the method referred to. In our own defense we desire to say that in our abstract the only reference made to this matter was a quotation from the report, in which not a word was changed or omitted. Moreover, since this matter came up we have twice read this part of the report carefully but can not find any statement in it to indicate that the originality lay in the quantitative analysis and not in the method as a whole.

STREET CLEANING RECORDS

A Discussion of Dr. Meyer's Articles on "Street Cleaning Accounting and Reporting"

By J. T. FETHERSTON, Engineer-in-Charge of Street Cleaning, Borough of Richmond, City of New York.

The articles on "Street Cleaning Accounting and Reporting" by Dr. Ernst C. Meyer of the U. S. Census Bureau in recent issues of the MUNICIPAL JOURNAL & ENGINEER have been of great interest to the writer, not only on account of their bearing upon street-cleaning work, but more especially in their relation in the vastly greater problem of "Municipal Efficiency," affecting alike all public works departments.

To discuss in detail the subject of municipal accounting alone would probably require more space than the editor would allow, yet Dr. Meyer's proposals cover an even wider field and affect the fundamental principles of all kinds of productive public work.

New York City is now preparing its budget for 1912, and should anyone desire to verify Dr. Meyer's criticisms on present systems of municipal accounting with relation to efficiency, a visit to the budget show will furnish food for reflection. Cost records are noticeable from their scarcity, and it will be found that public attention is given to human-interest objects—police exhibits, fire apparatus, police dogs, horses, automobile fire engines, models, supplies and other physical adjuncts of municipal work. The show is free and the object is to interest and educate municipal stockholders in their own financial affairs. Yet, as a rule, statistics receive but scant consideration.

There must be a general public demand for, and recognition of, municipal efficiency, before permanent reform in methods of conducting public work is possible. Does any such demand now exist? It did not exist twelve years ago in New York City. Col. Waring, in his book on "Street Cleaning" said:

My work in Street Cleaning has succeeded because it has been done for its own sake alone. The same success awaits any competent man who will manage any other of the city departments on the same principle.

But the people did not manage to retain Col. Waring in office, despite his recognized worth, and this, even to-day, may be the reason why efficiency, as indicated by physical results, reports and statistics, is noticeable by its absence in municipal affairs.

Dr. Meyer's suggestions for the adoption of uniform functional accounts and reports and their publication by some general clearing house such as the Census Bureau for the purpose of revealing relative efficiency in the street cleaning work of different cities, will be of decided educational value in directing attention to the need of reform in existing organizations and methods of conducting and reporting on public

work. The Bureaus of Municipal Research throughout the country and the various civic associations, accounting and engineering societies can likewise be of immense help in this regard.

The immediate problem, as the writer sees it, is to develop a readily understood conception of efficiency, so that citizens may know it, demand it and secure it.

ACCOUNTING AND COST-KEEPING—REPORTING

The aim of accounting or book-keeping is to show debits and credits, while cost-keeping is designed to show unit costs of work performed. The object of accounting is to show profits, while the object of cost-keeping or cost-accounting is to reveal efficiency. Accounting is a clerical function, while cost-keeping is essentially a managing, engineering function, requiring a knowledge, not only of applied science, but likewise of the art of management. The two are entirely distinct, and should be considered as separate functions. Any attempt to engraft an accounting system upon cost accounting will result in confusion and complexity without compensating advantages. The auditor's duty is to check expenditures and verify accounts, but what division of existing city governments shall certify to the work performed—the square yards of street cleaned, and the like? No such division exists in any city at the present time, insofar as the writer is aware.

Cost records, to be of value, must be correct, and should be verified by an independent authority connected with the governing board in charge of appropriations, otherwise low unit costs and dirty streets may not be incompatible. Quality, as well as quantity, of work should be standardized in advance and frequently inspected in parallel with the auditor's method of checking payrolls and bills. This will require the creation of a Planning Division in each department, with a Standardizing Division attached to the board in charge of city finances, following practices developed by engineers in private manufacturing establishments under the name of "Scientific Management." Until quantity, quality and expenditures are capable of verification, cost records will not be of actual comparative value.

The viewpoints of the accountant and of the operator, manager or engineer differ radically. City accountants seek to control expenditures. To-day this is accomplished by extreme segregation of funds, possibly in the fear that a paper of pins may be charged to the postage stamp account. The diagram, showing cumulative monthly expenditures of a street cleaning division for 1910, indicates the accounting method of securing control by binding department heads in advance to regular expenditures, fixed scales of wages and repressive regulations. Power, responsibility and incentive, essentials for administrative efficiency, are thus negated or practically destroyed, and inefficiency inevitably results. The table shows a functional cost record for the year covered by the diagram,

COMPARATIVE STATEMENT OF MAINTENANCE COSTS FOR YEARS 1909 AND 1910.

Quantity of work performed in 1910	Classified Work	1909.		1910	
		Unit Cost	*Total Cost	Unit Cost	Total Cost
25,190 miles	Street sweeping by hand and machine.....	\$3.15	\$79,348	\$3.11	\$78,379
107,958 cu. yds.	Refuse collection, household wastes and street sweepings.....	.60	64,775	.58	62,908
107,958 cu. yds.	Final disposition .....	.158	17,057	.157	16,996
84,508 cu. yds.	Snow removal—roadways .....	.17	14,388	.17	14,388
1,450 miles	Clearing gutters by hand and snow plow.....	4.59	6,656	5.39	7,816
15,72 miles	Clearing snow from sidewalks.....	58.55	920	65.08	1,023
332 miles	Clearing snow from crosswalks.....	6.18	2,052	5.06	1,980
1,580 cu. yds.	Spreading steam ashes, grits, & screenings on slippery streets	2.42	3,824	2.03	3,214
3,778 cu. yds.	Light repairs to macadam roadways.....	3.27	12,354	3.20	12,078
27 cu. yds.	Surfacing streets .....	.25	7	.26	7
308,101 sq. yds.	Weeding gutters and wings of roadways—per M.....	3.00	1,194	5.40	2,135
	Miscellaneous charges, actual, for each year.....		15,586		15,569
	Inter-Bureau charges, actual, for each year.....		7,837		5,387
	Deferred and outstanding charges, actual, for each year.....		5,086		6,143
	Office—Clerical and supervisory.....		8,577		10,325
			\$239,661		\$238,348
			238,348		
	Net profit.....		\$1,313		

*Based upon unit cost for year in question and 1910 quantity of work.

and indicates how a department may improvise competition by comparing each year's costs with the previous record of the same character, resulting in a final determination of the net profit or loss on the year's work. By this means a substitute for the competition of private business is available, and it is believed that the record here given contains some original features, at least the writer has not found any similar comparison in published reports.

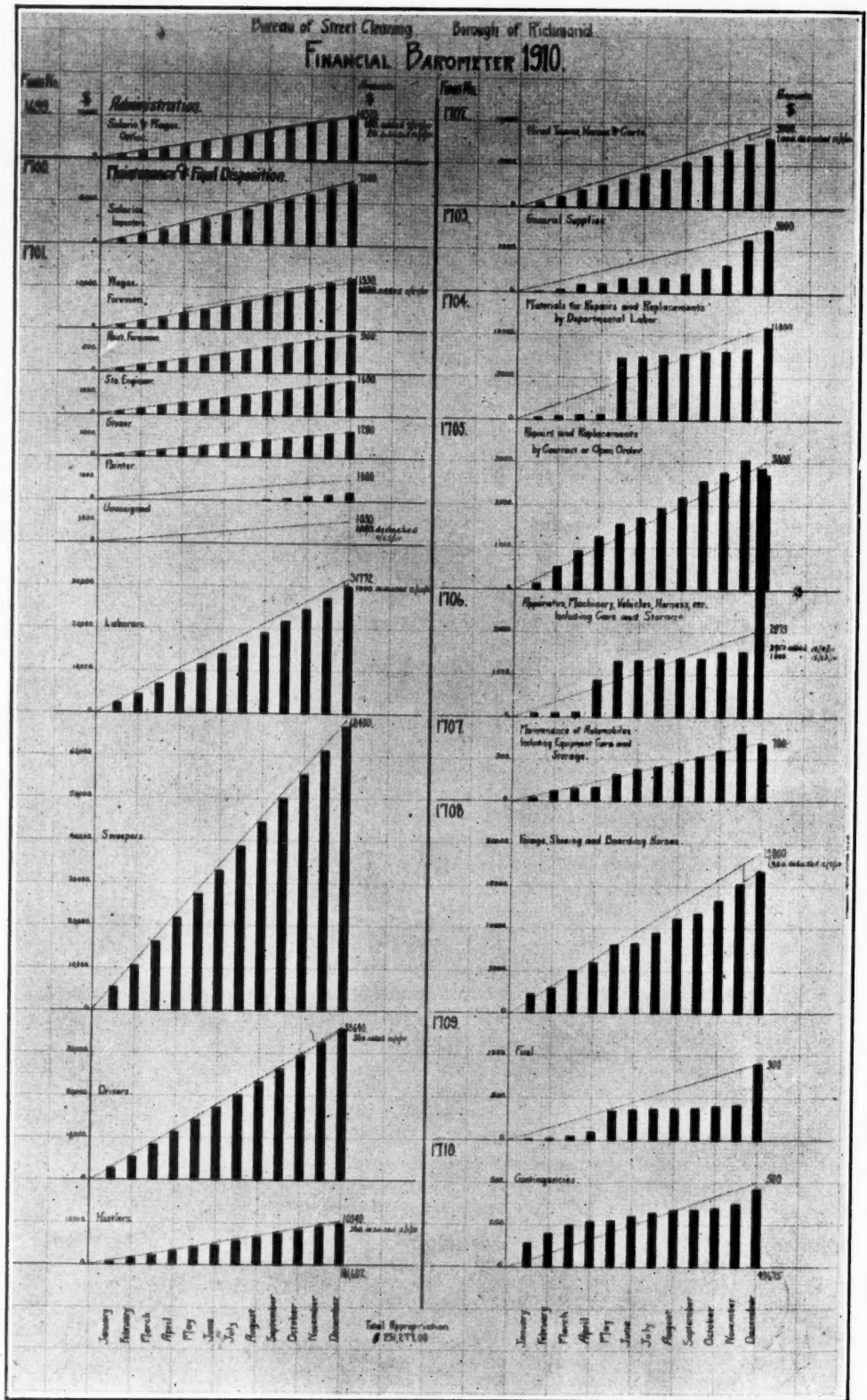
Each city must eventually supply and publish its own standards, together with actual costs for different classes of functional work, in order that all local and peculiar conditions affecting the work may be accounted for in determining efficiency. It is believed that in no other way can a satisfactory estimate of efficiency be secured. Without standards for actual work costs and verified reports for each city, the writer cannot see how it will be possible to compare the efficiency of different cities convincingly. Relative comparisons as proposed by Dr. Meyer may be of value, yet until all factors relating to the work are known, such as wages, hours of labor and the like, relative comparisons will meet with plausible explanations.

THE PROBLEM OF EFFICIENCY IN MUNICIPAL AFFAIRS

Cost-accounting and reporting are only two of the elements in the modern art of scientific management. There are other essentials of equal or even greater importance, and any municipality which will install, perhaps in a modified form, the successful methods of industrial management, with separate planning and working divisions; standardized methods and costs; systems of rewards or punishment; cost records and cost reports, and will secure capable executives, having power, definite responsibility and continuity of service—such a city can set a standard in municipal achievements which every municipality in the country will be forced to follow.

Let the Census Bureau, the American Society of Municipal Improvements, the various Bureaus of Municipal Research and allied organizations combine in an agitation for uniform functional accounts, and results will soon be forthcoming. Dr. Meyer deserves great credit for initiating the movement, and all who are interested in real municipal efficiency should lend their aid in furthering the project.

Note.—We desire to most urgently second Mr. Fetherston's concluding paragraph. The American Society of Municipal Improvements has arranged for practical and, it hopes, effective work along this line. Various bureaus have this as one of their aims. We ask their assistance in formulating standards or units of comparison complete enough to be of value but simple enough to make their adoption probable.



CUMULATIVE MONTHLY EXPENDITURES OF A STREET CLEANING DIVISION

MEMPHIS-TO-BRISTOL HIGHWAY

Suggestions and specifications for this highway, to be built on the co-operative plan, are given by Atwell Thompson, chief engineer of the Western division, in a brief circular recently published. This provides for a 50-foot right-of-way donated by the abutting owners; a minimum width of macadam or gravel of 12 feet, with a 4-foot shoulder on each side; a ruling grade of 6 per cent; a crown increasing with the grade and with the softness of the surface material. In western Tennessee, where there is no rock or gravel, only grading and draining is proposed, at a cost of \$600 to \$1,500 a mile. Where gravel or macadam is available and used, a cost of \$1,800 to \$5,500 a mile is anticipated.

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and without cost.

OCTOBER 18, 1911

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Hydrant Spacing and Fire Protection

It would be only natural if the great effectiveness claimed for the high pressure water distribution systems which have been constructed for fire protection in most of our largest cities should arouse the ambition of cities of the second class to possess similar systems. To any harboring such ambitions we recommend the reading of the opinions, on another page, of two fire insurance officials. If any class of men in this country know what precautions should be taken to minimize fire losses, it is certainly the underwriters; and these representatives of that class believe that high pressure systems are desirable only in the ten or twelve largest cities.

They strongly urge, however, that the pressure throughout the distribution system be increased in some cities, the minimum for the business sections being 80 to 100 pounds. Also that the hydrants be more numerous, so that hose friction—that is, length of hose lines—may be reduced.

This last point, although frequently referred to, does not seem to receive sufficient consideration, in spite of the fact that in many cases an actual money saving is possible in addition to the increased pressure secured. To illustrate: In 1907 the 47 cities in the United States having 50,000 to 100,000

population had, on the average, one fire hydrant for every 473 feet of main. They also had 863,176 feet of fire hose. Let us assume the hose to have a life of 6 years; interest and depreciation would then amount to about 20 per cent. Also assume the interest and depreciation on fire hydrants to be 6 per cent. Also that good hose costs \$1 a foot, and fire hydrants (including setting and connecting up) \$50 each. If hydrants be placed an average of 300 feet apart, in all these cities, we may assume that each line of hose used could be shortened by 173 feet; and if we assume the average length of a line at 400 feet, this means that the supply of hose kept for use could be reduced by 43 per cent; an annual saving of \$74,233. This would require 23,530 additional hydrants, the annual cost of which would be \$70,590. A net saving of \$3,643 would thus be effected, in addition to the greater protection offered against fire.

Each case would give different results, of course; some cities would show no net gain. But the offsetting saving in hose added to increased fire protection furnishes a strong argument for short hydrant spacing.

Chicago Sewage Disposal Experiment Station

IN our description, October 4, of this station we neglected to state that the plant was designed and built by Langdon Pearse, assistant engineer of the Sanitary District of Chicago, and the experiments have been and are still being carried out under his supervision. We are indebted to Mr. Pearse for the information given in the article and for the illustrations accompanying it. George M. Wisner is the chief engineer of the district. The president of the board of trustees of nine members is Robert R. McCormick.

Cure for Municipal Inefficiency

It is difficult to do one's best when there is no competition with others. It is almost impossible if there is, in addition, no way to determine how good it is.

If an athlete should run, without a competitor or any timing of his efforts, before a crowd which jeered him as an "also ran," although he was making record time, would he be apt to keep it up? Not long. But let him know that impartial judges are holding stop-watches on him, and that the crowd will accept their verdict and applaud a good record, and he will make one if it is in him.

City officials are just as human as other citizens. (Probably no one ever imagined otherwise until they were elected or appointed.) So why should any one expect municipal work to be done efficiently or economically? For there is no accepted gauge of its excellence. A daily paper says it is "rotten"; its readers believe it; the officials deny it. And there you are. Neither can prove his statement, because there is no unit of measurement—no standard of comparison.

The local papers say that the streets of (New York), (Chicago), (any old city), are the dirtiest on earth—a disgrace to the city—and cite a certain street as an illustration. Do they tell how much traffic this street carries? How many loads of dirt from public improvement excavations pass over it a day? How uneven the pavement is? How negligent the police are in preventing the throwing of papers and store sweepings into the gutters? How much rubbish is removed from it as compared with other cities? How much it costs a load to remove this? How many things they do not know about it? They do not. They "knock" the street cleaning department—that is easier and more spectacular.

But—do the city officials come back with these figures and refute the unjust accusation? Could the papers have obtained the answers to these questions? And if not, are they to blame?

There are very few cities where any such figures are available. City records furnish no data from which they could be calculated. The department may be run efficiently and economically, or just the reverse. No one knows.

Buffalo and San Francisco have nearly the same population. Buffalo reported spending \$54,000 for salaries and wages for street cleaning in 1908; San Francisco reported \$242,000 for the same purpose that year. Did the latter really spend four and one-half times as much for identically the same class of service? and did she get four and one-half times the service for it? We defy any one to say—and prove it.

If the careless or extravagant official knows it can not be proved against him, and another who is doing really efficient and economical work has no means of convincing the tax payers of the fact—indeed, cannot himself know how his work compares in these respects with that of his predecessor or of similar officials in other cities, where is his incentive to exert himself, and how long will his good intentions probably survive undeserved criticism?

Until we establish standards by which efficiency and economy can be measured we cannot expect to find them in municipal government.

And inefficiency and extravagance are responsible for fifty-seven times as much loss to our cities as are graft and speculation. (No one can disprove the accuracy of that figure, for reasons explained above.)

WATER METERS IN WASHINGTON

THE superintendent of the water department of Washington, D. C., W. A. McFarland has compiled and analyzed figures of costs and income of the water works which apparently demonstrate that it is necessary for the Commissioners to increase the meter rates. This is due to several causes. In the first place, it is found that the annual income from each consumer diminishes by about \$1.50 when the change is made from flat rate to meter basis. In addition, the average annual cost of each meter is: reading, 20 cts.; repairs, 22 cts.; depreciation, 27 cts.; a total of 69 cts. per meter per year. That is, under the existing rates there is a decrease of net income of \$2.19 for each meter which is installed. The average cost of installing meters is estimated to be \$13 each.

This is not taken by the commission as an argument against the use of meters, but only that the meter rates were made too low. It desires to install meters on 45,000 additional existing services, as well as on all new ones, which are being connected at an average rate of about 3,000 a year. An advance has been decided upon which will add \$107,000 a year to the income from meter rates on the basis of the present number of meters.

GRAND RAPIDS GARBAGE DISPOSAL

SOME years ago Grand Rapids, Mich., used for the destruction of its garbage two Engle furnaces of 50 tons capacity built in 1900. These are now used for the incineration of horses and other large animals only, and the garbage is delivered to a contractor to be disposed of. The contract was made for a term of three years and expires next year, when it will probably be renewed. Under it the contractor pays the city \$1,200 a year for the garbage; the city delivering the garbage into a steel car on a siding near its lower boundary.

The contractor takes the garbage in these cars to a hog farm a short distance outside the city. Here about 8,000 hogs are kept and fattened. The young are kept in pens, one litter to a pen. These pens have concrete floors and troughs, and are cleaned out daily. They are arranged in a building in two long rows with a passageway between them, which passageway serves as a driveway for delivering the food (which is shoveled directly from a cart to the troughs) and removing the cleanings of the pens. The older pigs are kept outdoors, but distributed in a large number of pens. All pens and grounds are kept much cleaner than the ordinary farmer's pig pen; and the odor from the entire farm did not seem, at the time of our visit, to be greater than that from the ordinary farm pen containing four or five pigs.

That part of the garbage fed to the young pigs is cooked in large vats, the heat being furnished by means of steam pipes around the bottom of each vat. Perhaps half of the food is

silos corn, the contractor having his own silos on the farm. Another considerable proportion of the food consists of sour beans. The beans are soured in the cooking vats, the hogs practically refusing to eat unsoured beans.

All the hogs are vaccinated for hog cholera every year, and there has never been a case of this disease at the farm. Altogether, the animals seemed to be healthy and cleaner than on the average farm. The garbage had no odor suggestive of putrefaction, and it is not allowed to accumulate at the farm, but is fed directly and completely to the hogs, of which there are such a number that any daily variations in quantity delivered merely means the addition of a less or greater amount of silos corn. There may be some putrid matter in the garbage, contributed by seldom-cleaned household garbage pails; but the amount was apparently insignificant. There is said to be some complaint of the farm as a nuisance. This would probably be the case wherever hundreds of animals of any kind are confined. It seemed to us less offensive than the majority of utilization plants.

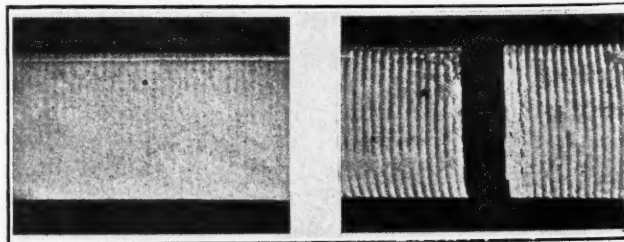
FIRE HYDRANT PRESSURE

Effect of Length and Smoothness of Hose on Pressure—
Hydrant Location—Saving to Fire Department—
High Service Systems

At a meeting of the New England Water Works Association, E. V. French, vice-president and engineer of the Arkwright Mutual Fire Insurance Company, read a paper entitled "Desirable Pressure at Hydrants," in which he brought together facts and data concerning pressures at hydrants and their relation to fire streams, the location of hydrants and related matters; which paper was discussed by a representative of the National Board of Fire Underwriters and by several water works superintendents and engineers. A synopsis of Mr. French's paper and of the discussions is given below.

The standard fire stream to-day is that discharged by a 1½-inch smooth nozzle, with a pressure at the base of the nozzle of 45 pounds, giving 250 gallons per minute. This is the size of stream best adapted for all ordinary work and for most of the work in any fire. With very large and high buildings a few larger streams are greatly desirable and can be obtained by siamesing several lengths of hose or, in the larger cities, by the use of 3-inch hose or occasionally larger sizes such as are sometimes used for fireboats. In dwelling-house fires smaller nozzles can sometimes be used to advantage.

Two and one-half inch cotton rubber-lined hose causes a loss by friction of about 14 pounds per hundred feet of length of hose with 250 gallons flowing. This is for smooth rubber hose. With cheap, improperly made hose the loss may be double this. In making rubber lined hose the cotton fabric is first finished. The interior, before the rubber lining is put in, is rough, due to the fact that the yarn used is rather large and that there is a space between strands. In good hose the inside is filled with a proper backing of soft rubber, so that when the final lining is drawn into the hose it cannot be pressed out into the depressions between the strands when water pressure is applied, as would be the case if it were not properly backed up as described. The illustrations show plaster of paris casts taken of sections of good and bad hose, both under pressure. To one familiar with hydraulics it is readily apparent why the



CASTS SHOWING SMOOTH AND ROUGH INTERIOR SURFACES OF FIRE HOSE

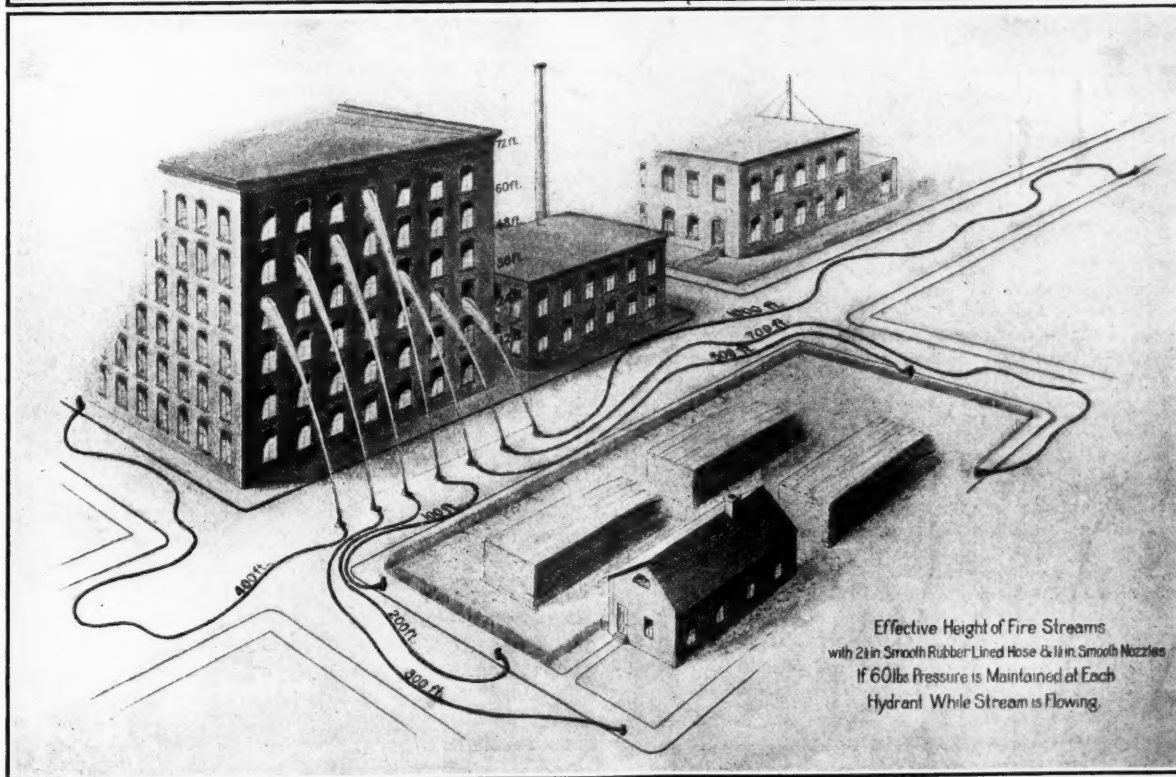
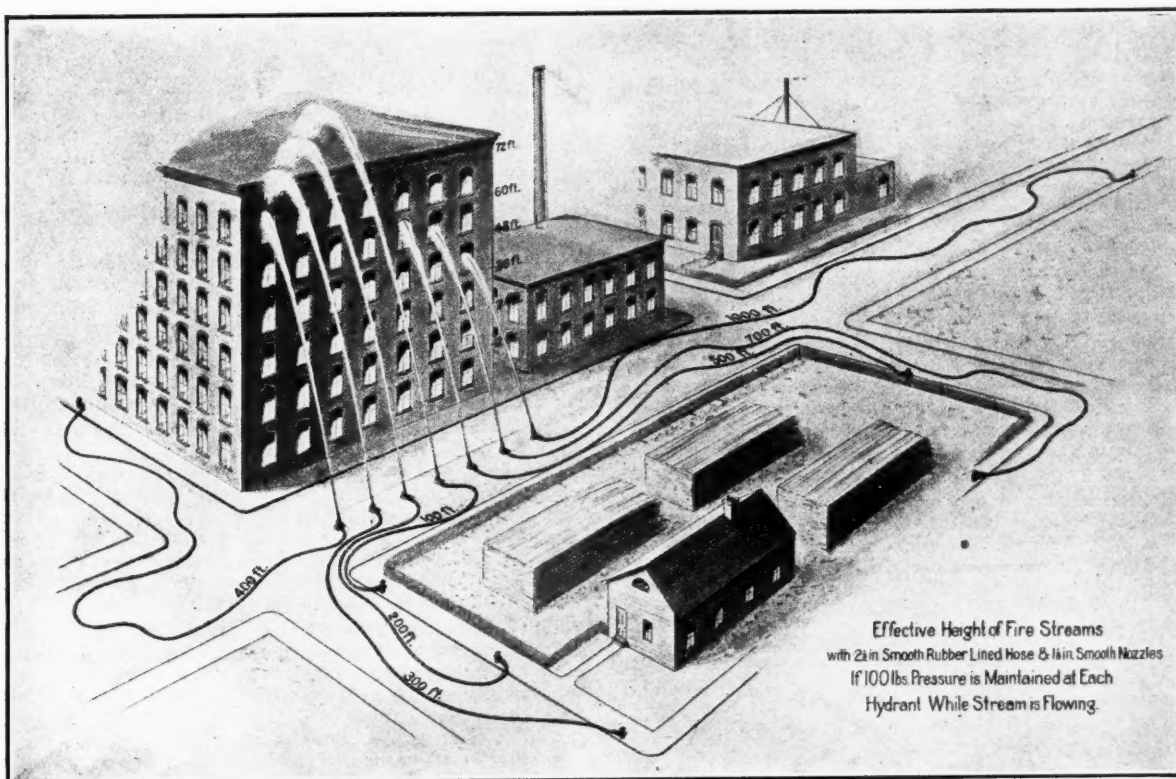
loss in pressure is nearly twice as great in one case as in the other.

While on the subject of hose Mr. French expressed his opinion that it was immensely better economy to pay 15 or 20 cts. or even more per foot and get a hose the life of which will be from 7 to 10 years, than to get a cheaper hose which will last only one-half to one-third as long in serviceable condition. It is a very good plan to test all fire department hose yearly under good pressure; not a pressure sufficient to damage it, but one sufficient to throw out the poor lengths. Such tests are also beneficial to the hose itself because rubber is rather improved by wetting it occasionally.

Assuming the best grade of hose, Freeman's fire stream

tables, worked out by him from experiments several years ago, show that to discharge a standard stream as above defined through one hundred feet of hose requires a hydrant pressure of 63 pounds, while to discharge it through 500 feet of hose requires 120 pounds hydrant pressure, and 192 pounds to discharge it through 1,000 feet of hose. These hydrant pressures are not the static pressures when no water is flowing, but to obtain this there must be added the loss in the mains, which reduces that at the hydrants when the water is being discharged.

The actual meaning of this was illustrated by Mr. French in several sketches, two of which are reproduced herewith. These show the effective height of streams thrown from the street upon a six-story building in which the height of stories is as-



EFFECTIVE HEIGHT OF FIRE STREAMS UNDER 100 POUNDS AND 60 POUNDS PRESSURE AT THE HYDRANTS

sumed to be 12 feet, bringing the roof 72 feet above the street level. It is assumed that streams are supplied from hydrants so located as to give hose lengths varying from 100 to 1,000 feet. In one of the sketches the hydrant pressure is assumed to be 60 pounds at each hydrant and in the other 100 pounds. The height of the stream shown is not that of the highest drops, but that at which the water has sufficient force to go through windows and strike the ceilings of the rooms with sufficient force to be thrown over a considerable area.

As a matter of fact, the important point is not the pressure at the hydrant, but the pressure at the nozzle; that is, pressure at hydrant minus loss in hose. The loss in hose, that is the length of hose, that is the location of hydrants, therefore becomes an important factor. Concerning this Mr. French said:

It is also of vital importance, where hydrants are to be depended upon for fire streams, that they should be so near together that the whole capacity of the water supply may be concentrated on any point where the total strength of the system may be needed, and this should be possible with the use of hose lines generally not over 300 ft. in length. This would usually require hydrants much closer together than is the common practice. Hydrants are, however, much cheaper than hose or steam fire engines. Where steamers are depended upon it is very common to use hose streams 500 and 600 ft. in length, and frequently longer, but this is undesirable, even with steamers, and a great waste of energy is absorbed simply in friction. With ordinary hydrant pressures depended upon, such needless losses cannot be tolerated.

From the above study it is evident:

First, that for the general conditions found in our cities and larger towns the ordinary static pressure at hydrants in the business and manufacturing sections which best meet the conditions as a whole lie between 80 and 100 lb. A pressure of 80 lb. will do very good work for smaller communities; 100 lb. is needed for the general conditions of cities rather above medium size.

Second, pipe sizes must be such that the maximum amount of water needed in any section can be supplied without reducing the pressures at the hydrants more than about 10 lb. below the ordinary static pressures existing with every-day drafts.

It often happens that there are considerable differences in elevation within the limits of one town or city. It is desirable where possible to so fix the pressure that a single system will supply all sections. This gives the simplest and most efficient arrangement of distributing pipes. In such cases, in order to get an efficient pressure in the higher portions, which would generally be the residential sections, it may be necessary to let the pressure in the lower parts be considerably above 100 lb., and this can be done without difficulty. At Fall River the pressures along the waterfront range from 100 to 127 lb. At Worcester a high-service system is available in a large part of the city and the pressures range from 140 to 150 lb. At Fitchburg the pressures average about 140 lb., running up to 150 in a number of places. These are high pressures and above what would ordinarily be recommended for a general public service, but they have been maintained and used by the regular consumers for years without special difficulty. The arrangement of the new water supply for Springfield, which gives 140 lb. throughout the business district, with pressures of 75 to 80 lb. for most of the residential sections, is an excellent example of different levels supplied by one system. It provides excellent fire protection and will undoubtedly prove satisfactory from practically every standpoint.

Experience shows that there is no serious difficulty in maintaining pipes and fittings within the limits of the above pressures. Further, that it is possible to change from a lower pressure to a materially higher one without any really important difficulties. With reasonable care there is no need of any great increase in leakage or in breaks, especially when starting new. Where the water has to be pumped it would cost somewhat more to raise it to the higher elevation, but with modern efficient pumping machinery the difference is not great and the whole cost of pumping is relatively small in comparison with other costs which our water departments must meet.

The first and principal advantage from hydrant pressures of 70 to 100 lb., and sometimes higher, comes from the immense improvement in fire protection which is secured above that obtainable with low pressure and dependence on fire engines. Each hydrant becomes practically the equivalent of the average steamer; lines of hose can be attached to a hydrant and water put on a fire much more quickly than if a steamer has to be set, connected and put in operation. If the progress of a fire makes it necessary to shift hose lines this can be done much more expeditiously than if a heavy fire engine has to be moved. When a conflagration threatens to sweep our cities, as at Chelsea and Baltimore, hose carts can quickly lay lines in dif-

ferent sections, making it possible to surround and drown a fire which would get away in the time lost by moving steamers and getting them in operation. Radical improvements in construction would be the best way to stop conflagrations, but this is a remedy which will come but slowly, and until our standard is greatly improved there is nothing which would give the probability of checking a conflagration so well as good pressure available at every hydrant supplied by pipes of such size that each hydrant could at any moment furnish two, three or four efficient fire streams. Strong water supplies also very much increase the value and efficiency of sprinkling equipments.

A town or city with such a water supply can make a very material saving in the cost of its fire department over what would be necessary with low-pressure water and sole dependence on steam fire engines. In such a city it would in many cases be necessary to keep only a few steamers in service and in some cases none at all. Such steamers as were needed would usually respond to only a few boxes in the more hazardous sections, so that in the main these steamers would be practically in reserve, and could be maintained at a minimum cost. Figures obtained in two cities under good average conditions showed the cost for maintaining fire apparatus to be about as follows:

Yearly cost of maintaining a hose wagon about.....	\$4,000
Yearly cost of maintaining a steam fire engine and a hose wagon	8,000
Yearly cost of maintaining a steam fire engine without a hose wagon.....	4,600
Yearly cost of maintaining a steam fire engine in active service beyond what it would cost to maintain it in reserve, about.....	3,400

These figures include the cost of the men, the horses, repairs and all ordinary expenses, together with a proper amount of interest and sinking fund charges for the house or the part of the house occupied by the apparatus in question.

It will be seen from these figures that a very material saving in annual cost is possible, and when this can be done with an increase in the efficiency of the fire department the gain is most satisfactory. This saving would generally more than pay for any additional cost in the annual charges for the water department, and would in some cases also pay considerable interest and sinking fund charges on the cost which might be entailed in changing a low or moderate system for one of good pressures, such as are believed desirable.

Such a system using separate pipes from those of the ordinary water works, and designed exclusively for fire fighting, with water supplied at pressures which may go as high as 200 or 300 lb. may be justified in ten or twelve great cities of the country, where enormous values are concentrated and warrant the maximum protection. It is not believed that such special systems are warranted in the great majority of our cities. The cost entailed would often be ample to put the usual system on a good pressure basis which would give most efficient fire protection. When this is done the whole city gets the benefit, whereas in general the special high service must be limited to a few districts. This method gives greater simplicity, efficiency and probably in general at lesser cost. If it is coupled with a judicious requirement for automatic sprinklers in dangerous buildings which may be fire breeders, more will be accomplished than by any special high-pressure fire system which could ordinarily be provided.

The statement that special high service systems are not to be recommended for the majority of cities is one which has not often been made, but which received the assent of all who discussed this point at the meeting. Even a representative of the National Board of Fire Underwriters, Geo. W. Booth, agreed with this statement, and stated that a great many of the reports of the board have referred to the fact that money can be spent to better advantage in bolstering up old systems and increasing the general pressure than by putting in separate systems. However, there are several reasons why, in his opinion, a system having a pressure of 80 to 100 pounds to the square inch does not always give effective results. One of these is inadequate size of mains, which cause the pressure to drop perhaps even 20 or 30 pounds when a number of fire streams are being furnished. Another reason is poor hydrant distribution; and still another is loss of head in a hydrant and its connection, a loss which has been found to be as high as 20 or 30 pounds. He stated that as a matter of fact the 300-pound maximum pressure provided for by most high service systems is never reached in practice, and the highest of which he knew was during three simultaneous fires in New York City when there was a pressure of 225 pounds at the pumping station and they were delivering something over 30,000 gallons a minute.

NEWS OF THE MUNICIPALITIES

Current Subjects of General Interest, Under Consideration by City Councils and Department Heads—Streets, Water Works, Lighting and Sanitary Matters—Fire and Police Items—Government and Finance

ROADS AND PAVEMENTS

To Surface Stone Blocks with Clay and Gravel

Charleston, S. C.—Engineer Reid Whitford, of the Charleston Sanitary and Drainage Commission, has determined upon a scheme of covering the surface of the Belgian blocks for a distance in the suburbs with clay and cement gravel in the endeavor to make a smoother and better pavement for automobiles. The plan, as at present advised, will be only in the nature of an experiment, and according to the measure of success attending it, will be put into general operation. The experiment will be made at the end of the stone roadway, where there are strips of clay and cement gravel 10 feet wide and of varying degrees of thickness, a portion with clay beneath and the rest without. The work will be begun during the week, and it will be left for the automobilists to try and make report upon. As Mr. Whitford explained, the necessity is to secure a cheap and serviceable material and the varying strips of different thicknesses and use of the clay and cement gravel will have to demonstrate their advantages and adaptability. Mr. Whitford is looking forward to the time when he will get the road-making machinery with which the work can be better carried on. Machinery and more money are urged for the work of building the roads in and out of Charleston.

Road Funds Wasted

Los Angeles, Cal.—There is no hope that the good roads project in Los Angeles County can be completed with the balance available from the fund raised by the sale of \$3,500,000 of bonds, according to a report made to the Highway Commission recently by F. H. Joyner, Chief Engineer. There now remains about \$600,000 to pay for nearly 100 miles of highway, some of it of heavy construction. This is fully \$500,000 less than should be available, if the estimates had been realized. Engineer Joyner asserts there has been much waste of money in the work already done. The waste consists largely of the use of more stone than the plans required, amounting to 1 inch of extra thickness on all roads built. This item amounts to about \$400,000. More oil than necessary was used. The cost of engineering and supervision—8 per cent—he considers too low, and as the probable cause of the waste of materials through inefficient supervision.

Another Toll Road Free

Wilmington, Del.—The New Castle County Levy Court has directed that the county pay \$17,000 for the Wilmington and Great Valley Turnpike, and all toll gates will be abolished. This is one of the main arteries for rural traffic, and the abolition of the toll gates will be a source of much satisfaction to thousands of persons who use the road every day.

City to Make Repairs on Pavements

Perth Amboy, N. J.—Determined that the city's numerous pavements shall be kept in good condition, the Aldermen and Street Department heads have made preparations to repair various kinds of pavements with the exception of bitulithic. The Standard Bitulithic Company has its plant here now and its men are going over all the bitulithic covered streets in the city, placing them in first-class shape. Wherever holes or defects appear in other kinds of pavements the city's Street Department will see that repairs are made and each pavement is kept in first-class condition. This department is equipped to repair all kinds of macadam, brick, asphalt block, wooden block, stone and ash pavements. It can also repair sheet asphalt, but there is so little of it in the city that that is a minor consideration. By the use of a special preparation, Street Commissioner George M. Adair claims he can repair bitulithic pavements as good if not better than contractors.

City to Work Prisoners

Lafayette, Ind.—As the result of an agreement entered into recently by city and county authorities, all prisoners at the county jail hereafter will be required to work for their board and room. The Sheriff has agreed to turn over to the city all prisoners at the county jail for the purpose of allowing them to work on the city's streets. The city will furnish guards, and in case any prisoner escapes the city will be obliged to recapture him without expense to the county. The city will also be required to buy clothing for the men while at work. This is a first attempt of the kind in Lafayette, and it is believed much important street work can be carried on with a squad of prisoners at work.

Street Paving Policy Stated

Birmingham, Ala.—"The Policy of the Commission in Handling Street Paving" is the subject of a statement issued by Commissioner James Weatherly, who has charge of the city streets. The statement is in part as follows:

As to new street improvements, none should be authorized except upon the consent of the property owners, the consent of all being obtained where practicable, and, furthermore, that competitive bids be obtained in all cases, and on all classes of paving, unless the property owners join in expressing preference for a particular class of paving. The idea of the commission is not to create such work in advance of the necessity therefor, but, in the main, to follow the wishes and needs of the property owners immediately to be affected by the assessment for the improvements. Of course, there must be exceptions to all cases, as, for instance, when it might become essential to the welfare and convenience of the entire city that a certain street or avenue should be improved. In such case, it might become imperative for the city to improve in spite of the objections made by particular property owners on the street to be improved. Such exception, however, will be of rare occasion. The city has adopted the rule of doing its own financing in the execution of the improvement work authorized by the board. Heretofore the contractor has done the financing through the banks, pledging the city's obligations in advance for the cost of the work at great loss eventually to the city and at loss to the general taxpayer. Now the city proposes to raise the money needed for such work, and, of course, will get the benefit of the city's credit in securing cheaper interest rates, and, furthermore, will cut out all unnecessary charges and commissions of the middle man.

Improvement Association Cooperates with Government Department.

Kensington, Md.—A largely attended meeting of the citizens of Kensington was held recently at the residence of J. W. Townsend for the purpose of organizing the Kensington Improvement Association. Much enthusiasm was aroused in favor of the proposed macadam road connecting Kensington with Rock Creek Park. Dr. William L. Lewis briefly outlined the general plans of the Department of Agriculture for making Montgomery County a model to show the possibilities of modern rural life. It is the intention of the newly formed association to cooperate with the department to the fullest extent in this work. Joseph W. Buck was elected president of the association, George H. Snyder, treasurer, and Lewis Meriam, secretary. The permanent standing committees are to be appointed at the next meeting, when a constitution will be adopted and definite work begun.

Threaten Drastic Action if Sidewalks Are Not Fixed

Hackensack, N. J.—Mayor Bell has prepared a resolution authorizing Town Engineer Campbell to request all delinquent property owners to bring their sunken sidewalks up to grade. If they do not comply the Mayor thinks the Commission should pass formal resolutions proceeding against such owners. Some of the Commissioners balked at drastic action. It was then that the Mayor stirred things up. "Some of the sidewalks," he said, "are a disgrace to the town. They are flooded in times of storm and people have to wade through water and slush in winter sometimes ankle deep. It's time we took some action."

Great Boulevard System Planned

Los Angeles, Cal.—Plans for an extensive boulevard system covering the entire city and modeled somewhat after the system in Kansas City are being prepared by Laurie D. Cox, landscape engineer for the city park department. The proposed system has for its basis the proposed Arroyo Seco scenic drive and the Silver Lake parkway in the northwest section of the city. The plan is to use, in addition to these proposed boulevards, other existing streets and boulevards; to widen them, change the width of roadways and parkways to conform to the most modern ideas of beauty and traffic requirements. Among other things the plan contemplates the ultimate removal of car tracks from Broadway and making it a sort of business boulevard, similar in some ways to Tremont street in Boston and other famous business streets. This type of business boulevard will contain no trees, but will be lined by handsome buildings set close to the sidewalk lines and with ornamental lamp posts. Broadway is considered the most available street for such a boulevard. A feature of one of different types worked out in the plans



is the wide parkways with sidewalks in the center of the parkways, the walks lined on each side with a double row of trees. From the driveway in the center the appearance is that of a continuous park for miles on either side, the four rows of trees enhancing this effect. Another advantage of this type is that water and gas mains can be laid in the parkways, thus obviating the necessity of tearing up the pavement in laying them and in making repairs and connections. The entire boulevard scheme, which is being worked out in connection with the Arroyo Seco project, accompanied by an exhaustive report and maps and diagrams, will be submitted to the park commission for approval as soon as completed. The map of the arroyo project alone will be 62 feet long. A general map of the boulevard scheme prepared in connection with this drawing is reproduced herewith. In the arroyo scheme no attempt will be made at formal gardening, the native trees, such as sycamores and live oaks, being allowed to grow in their natural state. Natural walks will wind through the bottom of the arroyo, the driveways being located for most of the distance on the banks.

Want Asphalt Filler Used

Freeport, Ill.—Because sand has been used to fill the space between the bricks instead of asphalt on the pavement on Stephenson street, which was torn up on account of the laying of the new street car tracks, residents of that street may take action to compel the Freeport Railway & Light Company to replace the pavement as it was before being torn up. The sand has washed out to some extent, leaving a small space between the bricks. When the pavement was first put down asphalt was used to fill the space between the brick. Aside from this objection, the pavement has been relaid in good condition.

SEWERAGE AND SANITATION

Allege Seepage Water Found in Basement of Restaurants

Sacramento, Cal.—The City Health Board has been notified by a gas meter inspector that the conditions beneath several restaurants are such that they are a menace to the health of the city. According to the informant, he went under several restaurants to examine the meters and found several feet of water collected in the basements, claiming that much of this water was the seepage of sinks and refuse barrels. An investigation is to be made by the Health Board.

Mayor Favors German Sewage Disposal Methods

Montclair, N. J.—Mayor Ernest C. Hinck has returned from Essen, Germany, where he made an inspection of the Imhoff system of sewage disposal which Montclair purposes to install instead of entering into the gigantic Passaic Valley Sewerage Commission's plan, and announced that his visit had made him determined to fight more vigorously than ever for the adoption of an independent sewage disposal system for Montclair. Mayor Hinck says the system he inspected in Germany provides an odorless, effective method of disposing of sewage at small cost; he also says 67 other municipalities in Germany are preparing to install the same system.

Towel Ordinance May Have to be Amended

Chicago, Ill.—It has been reported in the city hall that the ordinance recently passed by the City Council placing the ban on the public towel may be officially declared defective in that it does not include places which are not "washrooms," and many others which it was intended to reach. A modification will be necessary, it is asserted, for the ordinance to apply to saloons, factories and department stores.

Cincinnati Aids Kentucky Town in Checking Typhoid

Bellevue, Ky.—A typhoid epidemic has developed and extraordinary means have been taken to check it. The Cincinnati Health Board is co-operating in the work. Their bacteriologist found a well on a model dairy farm badly polluted. The dairy was in excellent condition in every respect, but the milk pails were washed with water from the well. Persons who have been exposed to the infection have been inoculated with typhoid anti-toxin by the officials of the Cincinnati Health Department.

To Reorganize Smoke Inspection Department

Indianapolis, Ind.—The Commission appointed by Mayor Shank to prepare an ordinance reorganizing the City Smoke Inspection Department will meet the Board of Public Safety to discuss the Commission's recommendations to be included in such an ordinance if the Safety Board agrees. The Commission proposes that the ordinance shall create a Smoke Commission to act in an advisory capacity to the Board and Mayor. Unless the Safety Board is willing to accept such advice as a Commission of the kind would give, and work in harmony with the Commission, the Commission feels there would be little use of creating such a body. The proposed Commission would be non-partisan and consist of not fewer than five nor more than ten members, to be appointed by the Mayor and serve without pay. It is proposed to make the Smoke Inspection Department a separate one. At present the Smoke Inspector is an employee of the Building Inspection Department, and is subject to the orders of the Building Inspector. A Smoke Inspection Department would be created with a Chief Smoke Inspector at the head, who would be a mechanical engineer with technical training. He would be appointed by the Mayor and Safety Board on the recommendation of the Commission, and receive \$2,500 a year.

Propose Legal Steps to Abate Smoke Evil

Syracuse, N. Y.—The Citizens Improvement Association urge that action should be brought against the New York Central & Hudson River Railroad Company to compel the abatement of the smoke nuisance in the center of the city. If the Supreme Court holds that it is a nuisance an injunction may then be gotten and the fight will be practically won.

WATER SUPPLY

Council Takes Step Toward New Franchise

Sullivan, Ind.—The City Council has passed a resolution providing for the granting of a franchise for supplying wholesome water to the city of Sullivan to E. M. Kerlin, of Lawrenceville, Ill. He proposes to take over the present plant and furnish water for \$6,600 a year for fire protection and at a maximum meter rate for private consumers of 30 cents a thousand gallons, an increase of 5 cents a thousand gallons over the present rate. The water will be obtained from the gravel pit at Riverton, near the Wabash River, a distance of eight miles.

Neighboring Towns Admire Water Plant

Barbourville, Ky.—The water works system of this city is attracting the attention of neighboring towns that are not so well supplied, and E. A. Geary, manager of the plant, has been to Williamsburg to look over the field with a view to putting in a plant there.

Muddy Water Due to Lack of Chemical Treatment

Council Bluffs, Ia.—After a week of more or less muddy and disturbed water, the patrons of the local water works company will be treated with a clearer product. The muddy appearance of the water was caused by the lack of chemical treatment at the reservoirs. The pipe through which the alum is conducted into the main carrying the water from the pumping station to the Broadway reservoirs was eaten so badly by the chemical that it had to be replaced, and while the pipe was being replaced the water had to settle without the use of alum.

Advise Investigating Water Tower Site

Natchez, Miss.—County Attorney Wilmer Shields called attention to the fact that it would be well for the city to investigate before taking final action in the matter of building a 200,000-gallon water tower on the middle bluff for the municipal water works plant. Under a decision rendered by the State Supreme Court in the case of Rowzee vs. Pierce, it was held that the municipal authorities of a town to whom land has been donated for public use as an ornamental park exclusively, may be restrained by injunction from subverting the object of the donation by building a public school thereon. It is thought that the water tower is not conducive to the enjoyment of the bluff as a public park and the court would so hold if an injunction is sought.

Water Works for Manitowoc

Manitowoc, Wis.—The city last week took possession of the water plant, but the company did not give up its books. Some question was raised as to whether under the valuation set by the Rate Commission, the city is entitled to the books of the company, but as the water works plant was wanted as soon as possible it was thought advisable to take no action that would mean delay.

Macon Now Owns Water Works

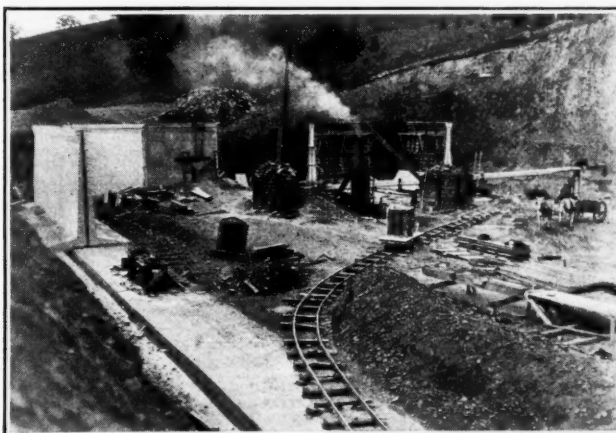
Macon, Ga.—With the paying over of \$699,000 by Mayor Moore on behalf of the city to the Macon Gas Company, the financial arrangements have been completed and the city has formally taken charge of the plant. With the transfer of the water works, Macon makes its first experiment with municipal ownership, and the operation of the plant under management of the Commissioners will be watched with interest.

Water Supply Remains Pure

Binghamton, N. Y.—Although sewage bacteria are present in the river water and the Susquehanna is filled with a species of algae, the filtered water remains pure and free from unpleasant taste. The report of the City Bacteriologist to the Health Department shows the presence of intestinal sewage bacteria in the raw water in abundance, but declares that the filtered water is free from impurities. The efficiency of the filter is placed at 98.45 per cent. The report says: "Another growth of algae is present, due to the rains. The algae are of quite a different species from that to which the last trouble was due, and not much annoyance is expected."

Binghamton's Reservoir Nearly Finished

Binghamton, N. Y.—Binghamton's new reservoir, which is to increase the force of the city water supply and at the same time provide Binghamton with a 24-hour supply of filtered water in case of an accident to the pumping station, is nearing completion. Since the Austin tragedy residents of the First Ward have been wondering how it would be with that section if the water works reservoir gave way. The big tank is being built on a plan, it is said, that makes such a catastrophe impossible. In the first place, there will be a uniform pressure on the reservoir at all times and as



Courtesy Binghamton Press.

CONSTRUCTING BINGHAMTON RESERVOIR

surface water does not flow into it, the heavy rains will have no effect. The walls of the reservoir are of concrete reinforced with steel and are calculated to withstand a much larger pressure than can ever be required of them with the capacity of the reservoir. The walls are in turn reinforced with a heavy embankment of earth surrounding the entire structure, which in itself is a guarantee of safety. The big reservoir is built in a manner that precludes the possibility of disaster even on a small scale.

Mason Work at Dam Shows Progress

Waterbury, Conn.—City Engineer Robert A. Cairns said during the week that about one-half of the mason work and about one-third of the earth excavation for the new dam at Morris is complete and the work is progressing in a very satisfactory manner. The total amount of earth to be excavated is 550,000 yards and of this amount about 180,000 is complete. The masonry work comprises about 25,000 cubic yards. The dam, when complete, will be 100 feet high and 1,000 feet long, will contain 2,000,000,000 gallons of water and will cost \$1,000,000. It will increase the present city supply so as to make the supply sufficient for a population of 100,000 people. The stripping of the basin will keep 100 men busy one year, and it is expected the great reservoir will be complete in one year, though unforeseen circumstances, such as extra hard digging or long periods of wet weather, may necessitate a longer period to finish the work.

City Votes to Condemn Water Plant

Des Moines, Ia.—Steps for the condemnation of the plant of the Des Moines Water Company were taken by the City Council at last meeting, when it passed a resolution instructing the City Legal Department to go before the Supreme Court and secure the appointment of a Court of Condemnation. Three District Court judges will compose the court of condemnation. It is expected that City Solicitor Brennan and Corporation Counsel H. W. Byers will go before the high tribunal during the week.

Johnstown to Adopt Sterilization System

Johnstown, Pa.—After an extensive series of experiments at St. Clair Reservoir with what is known as the hypochlorite system of sterilization, the Johnstown Water Company has decided to adopt the process at each of its sources of supply and has just completed and put in operation a plant that treats the water from the Millcreek and Dalton Run reservoirs. The system consists of mixing a comparatively minute quantity of hypo-chlorite with the water as it passes through the mains. This agent has been found to be the most effective in sterilizing large volumes of water.

STREET LIGHTING AND POWER

City Famous for Its Lighting Plant

Grand Rapids, Mich.—Because of the reputation the municipal electric lighting plant of this city has achieved throughout the country, Charles Homer Talbot, of Kansas City, Mo., has written to the prominent citizens of Grand Rapids asking for information that may be helpful to them in the proposed construction of a plant in that city. General Manager Freshney, of the Board of Public Works, has answered the list of questions sent to him. His answer of "No" to the question, "In your judgment would the people of your city willingly dispose of the municipal lighting plant and go back to the old system of private ownership of this public utility?" tells in a word how he stands, and believes the people stand, on the proposition. Following are the other questions and answers: "From the experience of your city, what is the main reason for or against the municipal ownership of an electric lighting system?" Answer: "Municipal ownership saves money for the taxpayers." "Has the municipal lighting department ever been used as a part of any person or party's political machine?" Answer: "No." "What, if anything, prevents the department from being filled up with appointees appointed for political reasons, rather than for merit?" Answer: "Common decency." How do the costs of the electric street lamps furnished by the municipal plant compare with the prices paid for such lights to private companies before its establishment?" Answer: "Contract price just prior to municipal ownership, \$94 per lamp per year. Cost under municipal ownership, \$55.91 per lamp per year."

Elwood Will Get Artificial Gas

Elwood, Ind.—The first definite steps toward bringing artificial gas to Elwood were taken a week ago when C. M. Hooven, of Anderson, who purchased the holdings of the local gas company, let the contract for the laying of a gas line from Anderson to Elwood. The contract was given to a Noblesville firm and it has agreed to begin work immediately with the prospect of completing the line within ninety days. The gas main will be laid in a straight line between the two cities and will be sixteen miles in length.

Will Illuminate City Light Plant Sign

Richmond, Ind.—The Board has decided to purchase a large steel sign for the municipal light plant. The sign will consist of the words, "City Light Plant," and will be 42 feet long and 3 feet 9 inches wide. It will be illuminated at night by 195 incandescents, and will hang 6 inches from the building and will be placed on the side facing the Main street bridge.

Move for Cheaper Gas

Freeport, N. Y.—J. Huyler Ellison, president of the Roosevelt Water Company and a resident of this place, has filed a petition with the Public Service Commission for cheaper gas for this section. Mr. Ellison is the probable Republican candidate for member of Assembly from Nassau County, and it is thought that he will make this one of his planks in the Republican platform and strive to secure a cheaper rate for the entire county of Nassau. The present rate paid the Nassau & Suffolk Lighting Company is \$1.50 per thousand feet. This is regarded as exorbitant. It is recalled that the Queensboro Gas & Electric Light Company was forced to reduce its price of gas last year, when the residents complained by petition to the Public Service Commission, and people here are hopeful of like results.

Red Wing May Purchase Lighting Plant

Red Wing, Minn.—With the appraisal of the properties of the Red Wing Gas Light & Power Company, soon to be made by the city, and the municipality seriously considering the purchase of the corporation's gas and electric plants, the Council deems it unwise to enter into a new contract with the company for electric light service for any period of time other than from month to month. Under the conditions, the present contract, which expires October 1, will be extended for another 60 days.

Want Electrical System Without Bonds

Los Angeles, Cal.—An electrical distribution system without the issue of bonds is the plan proposed by W. J. Washburn, chairman of the Council's Finance Committee, and his idea met the approval of the other members of the committee when he broached it to them. The committee will ask the Public Service Commission to consider the matter. The Public Service Commission has asked the Council to call an election for the issuance of \$5,500,000 of bonds to construct a municipal distributing system for the Owens River power. This request has been under consideration by the Finance Committee, but the committee wants to get the system without issuing bonds if it can be done. Mr. Washburn said: "If we go ahead and build the distributing system without consulting the power companies already in the field, it means we will have to fight every inch of the way. It means a cut-throat competition that will do neither the city nor the power companies any good. The city is absolutely committed to the policy of distributing its own power. The power companies know this, and it may be possible for us to treat with them on reasonable terms. It may be possible for us to purchase a distributing system much cheaper than we could put in one of our own. And we may be able to do it without issuing bonds. Most of these companies are heavily bonded, and we may be able to arrive at some solution whereby we could assume some of their bonds. While their bonds are issued at 5 per cent and more and we sell ours at 4½, that is a detail that could be arranged in the price we would pay for the system."

Seeking Approval of Public Utilities Commission

Columbus, O.—The first movement to consolidate the interests of two public utilities of the fuel and light type was started before the new Public Utilities Commission when the Chester Hill Fuel & Light Company submitted its application asking the Commission to approve the sale of its property to the competing River Gas Company, a Standard Oil subsidiary, for \$4,500. The Commission must investigate before it can approve the sale.

Columbia Installs Acetylene Plant

Columbia, Tenn.—An acetylene light plant is being installed at Spring Hill in this county, and within a short time three streets of that town will be completely lighted. The plant will cost between \$3,000 and \$4,000 and is being put in by the city government. Several hundred dollars is also being spent by the town in street improvements, more than a mile of concrete pavements having already been constructed. This little town has made rapid progress during the past 10 years and now has almost 1,000 population. When the light system is installed and the streets are paved it will be one of the most attractive towns in the State.

Montevideo's Big Searchlight

Montevideo, Uruguay.—Montevideo, in Uruguay, has a new searchlight of the enormous power of 90,000,000 candles which can be seen for 11 miles, and which illuminates every portion of the city. Consul Goding at Montevideo reports that this is the third strongest searchlight in existence.

High Power Lights for Capital Streets.

Washington, D. C.—Washington's new 100-candlepower incandescent electric lamps, which have been installed along certain thoroughfares of the capital, were turned on last week. A carload of specially designed posts has been received and the work of installing 100-power lamps along Massachusetts avenue will begin during the week.

If Merchants Agree, White Way Will be Extended

Macon, Ga.—The Council Committee on Lights is working out plans to have the White Way on the main portion of the city extended over a much greater portion, to give the city at night a much more beautiful appearance. The matter rests with the merchants and if they will agree to pay for the 16 posts that are placed at each block, the city will furnish the light and other material. Secretary Hyman, of the Chamber of Commerce, is now working among the merchants in front of whose places the White Way is proposed to be built and he reports that all seem to be in favor of doing their share toward lighting up the city.

FIRE AND POLICE

St. Louis Police to Have Merit System

St. Louis, Mo.—A new set of rules and regulations for the police force has been adopted by the Board. The rules dealing with the training and selection of recruits are the most interesting. Applicants will be required to acquaint themselves with inside service, such as telephone and clerical duty, for 30 days. Then, for 30 days, they will be under experienced men on the outside. At the end of 90 days they will be examined for probationary patrolmen. At the end of one year the candidate will receive the rigid examination, which, if he passes, will entitle him to a commission for life. At present no physical examinations are required. The only examinations are oral. The candidate is given 30 days with a patrolman, does 60 days' duty and is then given another oral examination. The school of instruction under the new rules will embrace theoretical training and actual police work. During the first month daily attendance at the school will be required, with periodical attendance at the Criminal Court. During the next two months the candidate will be given station duty as clerk, traffic duty as assistant to regular traffic men and beat duty, accompanying a veteran policeman. In the latter period an attendance of one day a week will be required at the school for further instruction and examination. At the expiration of 12 months the examination will be held that will determine the fate of the candidate. The school of instruction will embrace mental instruction, physical training, first aid to the injured, drilling and target practice. The mental instruction will include the rules and regulations of the department, the law of evidence and the preparation of the same, and rudimentary instruction in criminal law. Such training will include not only the study of text-books, but the cases arising in ordinary police work will be threshed out. One of the most-discussed subjects, the rights of officers to make arrests with and without process, will receive due consideration. One of the most important subjects of the new rules will be first aid to the injured, of which every policeman should have a knowledge.

Village Receives Its First Fire Engine

East Youngstown, Ohio.—After being without fire-fighting apparatus other than a team of horses, a gravel wagon and 1,000 feet of hose since its incorporation six years ago, the new fire engine ordered by East Youngstown three months ago has arrived and was installed in the department quarters in the new city building. In a trial last week it threw a stream of water 150 feet high. A big demonstration of the machine was then held, at which the Fire Chief of Cleveland, Chief Loller and other members of the Youngstown department and those in the surrounding villages were present. The new steamer is of the latest model and is drawn by two horses. It is of particularly handsome design, much of the surface being nickel plated. It presents an attractive appearance. Mayor Hamilton has been honored by having the engine named after him, his name appearing in a conspicuous place on the machine.

Police Must Wear Uniforms

Owensboro, Ky.—On October 1 the officers of the city, who for years had not been obliged to wear the regulation police uniform, were forced to obey an order to the effect that they don the uniform, as is done in other cities.

Regulars to Take Place of Park Policemen

Milwaukee, Wis.—The maintenance of order in parks will be turned over to the Police Department, if the plans which Commissioner Kowalski intends to submit to the Park Board at the next meeting are adopted. Commissioner Kowalski believes the payment of a special corps of 20 park policemen an unnecessary burden, and thinks the work can be done as effectively by the Police Department. In order to insure some of the special policemen their pensions he will propose that they be placed on the regular police force. Whether the suggestion will be received favorably by other Commissioners is doubtful. It is said that some of the park policemen have been on duty many years and that they will be unable to get on the regular police force. One of these has been on duty in Lake Park for more than 20 years.

GOVERNMENT AND FINANCE

Commission Form Saves One Department \$500

Trenton, N. J.—Nearly \$500 has been saved in the administration of the Fire Department alone since the inauguration of commission government. As a result the public commendation of the City Commission has been formally forwarded to Secretary J. Wallace Hoff, who was said by Mr. Le Barre to have been most directly responsible for the excellent showing, and, in addition, Mayor Donnelly complimented the Director of Public Safety upon such a remarkable demonstration. Mr. Hoff's report said the saving had been effected through competitive bidding on small repairs and the furnishing of current supplies formerly placed entirely by preference. In amounts ranging from \$6 to \$60 the total saving reached almost \$500 from August 22 to September 30. This, in itself, discloses additional possibilities under commission rule. Mr. Hoff, in his report, points with proper pride to the accomplishment that would have been possible under the old political administration of affairs, and instead of being reprimanded for interference with the prerogatives of others, as he likely would have been under the old régime, he receives public recognition for his watchfulness.

Expenses Cut Under Commission Form

Hoquiam, Wash.—After two months under the commission form of government, the City Commissioners have decreased the operating expenses of the city \$800 a month. The comparison is made between the month of July, under the reign of the old Council, and the month of September, after the Commission had begun working out its plans.

Pontiac Likes Commission Government

Pontiac, Mich.—During the six months that Pontiac has been ruled by Commission government, the Commissioners have proved by figures that the city is ahead \$13,000. The difference in the cost of running this form over the old Council is just \$4,900 in salaries each year. The first week that the Commission was in they raised the income of the city by more than that amount by increasing the number of saloons in Pontiac from 10 to 12, and while the favored two were jubilating they tacked \$500 more on the license fee. With the exception of the \$250 paid to the county Pontiac is now getting an increased revenue of \$600 from saloons.

Decided Increase in City Financial Report

Topeka, Kan.—The financial report of the City Commissioner of Finance, R. L. Bone, for the third quarter of the year shows that it took \$276,204.74 to run the city during that period as against \$171,977.21 in the second quarter of 1911. The decided increase in figures is explained largely by the fact that much paving work has been in progress which has necessitated extra expense. Paving warrants totaled \$55,028.66 as against \$8,847.14 for the previous quarter. The white way is at least the cause in part of an advance in the item for the maintenance of the city electric light department. The increase was about \$600. It cost slightly more to run the city garbage plant. The receipts were \$908.95 while the expenditures were \$2,469.01. The repair work in connection with the installation caused the running of the asphalt department to be more expensive. On July 1 the city funds totaled \$329,750.96. Through taxes \$30,040 was received and through other sources \$155,313.81 was added to the resources, making a total of \$515,104. Deducting the amount of expenditures, 276,204.74, left a balance on hand at the end of the quarter of \$238,900.03.

Municipal Ownership of Utilities Favored

Camden, S. C.—Some time ago the Camden Water, Light & Ice Company applied to the city for a franchise. City Council decided to allow the voters to say whether or not they would grant the franchise. About the same time the company applied for a franchise a number of citizens agitated municipal ownership, and as a result a very enthusiastic mass meeting was held at the Court House, where the anti-franchise and franchise men had heated arguments. The crowd seemed to be decidedly opposed to granting a franchise and at the polls last week they showed it. The vote stood 120 against granting the franchise and 23 for it. It was necessary for every voter to have his registration certificate, and only a few could find them. The next question to be decided is the bond issue.

Wants Government to Continue Paying Half of Expense

Washington, D. C.—The menace which hangs over the District in the shape of a plan to do away with the present system of appropriating for the District by which the Government pays one-half the expense and have Congress establish a fixed sum as the Government's share of the expenses of the National Capital was discussed by Gen. Harries, President of the Board of Trade, at the first fall meeting of the Board of Directors of that organization held last week. Gen. Harries told the Board that, in his opinion, the proposition was more serious in probable consequences than any which has confronted the people of Washington in a long time. He indicated that the committee on municipal finance of the Board would take up the matter and make a careful investigation. The same committee, he said, would have before it the increase in water rates which has been ordered by the District Commissioners and would report upon it to the Board. He discussed the action of the Commissioners in ordering the increase without first giving any of the citizens a hearing in the matter, and referred to the increase as that "very logical plan whereby residents of the District, because they are paying more than they ought to pay for water, are to pay still more."

Kalamazoo May Decide to Adopt Commission Plan

Kalamazoo, Mich.—To decide whether Kalamazoo wants a revision of its charter for the purpose of establishing a commission form of government, an election will be held November 6. Eight commissioners will be elected to revise the charter, which will again be submitted to a vote. Although it has been desired to eliminate politics entirely the new State law provides no way for the nomination of a charter commission except through political parties.

Salem Will Vote on Commission Form

Salem, Ore.—At the regular meeting of the City Council last week an ordinance was passed for the calling of a special election to vote on the adoption or rejection of the commission form of government. The election has been set for October 26.

Commission Form by Small Majority

Beatrice, Neb.—At the special election held last week Beatrice voted to adopt the commission form of government by a majority of 59. The total vote cast was 1,205. There was strong opposition to the proposition by the Socialists.

STREET CLEANING AND REFUSE DISPOSAL

Ashes of Burned Garbage Valuable as Fertilizer

Spokane, Wash.—Superintendent Arthur Peterson, of the city crematory, claims he has found a veritable gold mine in the crematory dump. He has had the ashes of the burned garbage analyzed and declares they are an excellent fertilizer, worth \$9.15 a ton in any market. It is estimated at the present time that there are anywhere from 500 to 1000 tons of ashes available on the dump for fertilizer. The superintendent announces that he will sell the ashes as long as they last at \$8 a ton, or 50 cents per 100 pounds in lots of less than a ton, delivered to any part of the city. The city laboratory test of the ashes shows 18 per cent lime, 7.4 per cent of phosphoric acid and 1 per cent of soda and potash, all ingredients for a good fertilizer, according to the chemist.

New Rules on Garbage Disposal

Oskaloosa, Ia.—Disposal of garbage and the cleaning of premises to secure healthful conditions are provided for in a new set of regulations which the State Board of Health will soon promulgate. City and county health authorities will be expected to enforce the rules, which will require all property owners to provide garbage cans and arrange for their removal at least twice weekly; barns, stables, cattle yards and chicken yards must be cleansed daily when in constant use; cellars, caves and outbuildings must be cleaned twice a year and outhouses shall be prohibited where connection with city sewers can be secured. The property owners will be required to furnish the garbage cans for their tenants and supervise its disposal.

Garbage Crematory Gives Satisfaction

Portland, Ore.—According to the report submitted by the health officers and engineers to the Health Board, the new garbage crematory is thoroughly satisfactory. During September the average cost of incineration was 50 cents a ton, which is two cents under the guaranteed cost of incineration made by the Public Works Engineering Company. During the week in which the 100-ton test in one unit of the furnace was held the plant exceeded expectations, according to the report, and each day during this week more than 100 tons of garbage were burned. One day last week, with both units in operation, 168 tons were burned, and on another day 154 tons. The crematory has a guaranteed capacity of only 150 tons. If the plant continues to give satisfaction it is said that it will be accepted.

Incineration Ultimate Aim in Garbage Disposal

Detroit, Mich.—Not only the collection of garbage, but a comprehensive and permanent plan that will include efficient and economical collection of all city refuse, the cleaning of the alleys and the scientific disposal of the waste, is the ambitious programme to which the sanitation committee of the Board of Commerce has set itself. That the incineration system using for city purposes the power generated in burning the stuff, is the most sanitary and economical yet devised, is the opinion of the committee.

Poisons in Garbage Kill Hogs

Moline, Ill.—Loss of hogs valued at \$300, owned by farmers of South Rock Island, has been found to have been caused by lye and other poisonous substances which have been used for cleaning garbage cans. For some time the city of Rock Island has turned its garbage over to two hog raisers, who have used the stuff for feed. The practice has saved the city \$100 a month expenses. A large number of the animals have been poisoned in the past week, and the owners had remains analyzed to ascertain the cause. Now Rock Island housewives are warned that they must cease mixing poisonous substances with their refuse.

Municipal Plant for Garbage Disposal

Washington, D. C.—In the estimate for the next fiscal year an item for the preparation of plans for municipal garbage reducing plant has been included. The District pays \$68,400 yearly for removal of garbage. Commissioner Judson believes a great saving would result if the District would follow the plan of Columbus, O., where the plant costs \$80,000 a year, and the product is sold for \$57,000.

RAPID TRANSIT

Traction Company Fight at Spartanburg Ends

Spartanburg, S. C.—After months of discussion the City Council last week, by a vote of 4 to 2, granted to the Greenville, Spartanburg & Anderson Railway Company a franchise to build and operate trolley lines in Spartanburg. The franchise will expire on May 2, 1939, when the franchise of the Spartanburg Railway, Gas & Electric Company terminates. The short term of the franchise may make it unacceptable to the company, which has 30 days in which to accept or reject it. The most important clause of the franchise is as follows: "That the rights, privileges and franchises hereinbefore or hereinafter granted shall be operative upon all streets and avenues of the said city of Spartanburg for the operation of passenger and express cars except on such narrow streets as may in the judgment of the said Council be unsafe or dangerous to operate cars. . . . The said City Council reserves the right to pass such ordinances as they deem proper regulating the operation of freight cars and to designate upon what streets the same may be operated."

Want Trailers on Cars

Elwood, Ind.—Stating that men and women of this city who work in Tipton and in the country west of the city are compelled to stand up in riding into town on the traction lines, local Socialists have passed a resolution asking the Indiana Union Traction Company to place trailers on all its cars passing through here on Saturdays. Copies of this resolution have been sent to the officials of the company, bearing the names of all the members of that party here.

Lexington Will Install Pay-as-You-Enter Cars

Lexington, Ky.—Announcement has been made that the pay-as-you-enter car system represents an outlay of \$4,000. The fare-box, as the machine for collecting fares is called, will be placed on the rear of each car in the city, and the conductor will stand beside it, never entering the car. This plan, which allows the conductor to see just when his passengers are on or off, is expected to cause a decrease in the number of street-car accidents caused by the starting of the car before the passenger has got on or off. The box is so arranged that nothing larger than a nickel will go in it. It will receive pennies, nickels, and dimes, and counts them as they are fed into it. The system also requires that passengers get on at the rear of the car, and leave at the front end, thus preventing congestion. It is thought that the new system will be of great benefit to the public, as it has met with success in a number of larger cities.

Newton Interurban Line Complete

Newton, Kan.—President Boyle expects to complete the surfacing of the track and the building of overhead work during the week, in which event regular train service on the new interurban will be established at once. The present hourly service between Wichita and Sedgwick will be extended to Newton. For the present all cars will make local stops, covering the 29 miles to Newton in an hour and a half. It is probable that limited service will be established later. The formal opening of service between Wichita and Newton will occur Oct. 24 at Newton. This is the annual "Booster day" for Newton business men, who have invited Interurban company officers and Wichita business men to participate.

Electric Line Planned for Brigham

Brigham City, Utah.—At the meeting of the City Council the matter of granting a franchise to Judge Watson and associates to construct and operate an electric railway system in Brigham City was taken under consideration. The committee on laws and ordinances recommended that the franchise be granted and that the railway be constructed only upon such streets as are necessary, and upon such terms as are of the best advantage to Brigham City. Such an electric line would form a chain of electrics from Salt Lake City to Idaho Falls, and would make a big cut off between Salt Lake and Ogden and the Northwest.

MISCELLANEOUS**Plan Whereby Parks May Be Built with Refuse**

Chicago, Ill.—A plan to make 100 acres a year of public park land out of Lake Michigan without cost to the city has been submitted to the City Council by the Chicago Park Commission. The scheme suggested is to allow contractors who cart away ashes, cinders, excavated earth and other materials the privilege of dumping the waste in the lake, provided they build retaining walls at their own expense. The report was asked by the City Council, and favorable action seems probable, Aldermen say. The report estimates that 4,000,000 cu. yds. of waste material could be obtained each year. At present 2,000,000 cu. yds. of waste is hauled far out in the lake at great cost to contractors. The report points out that while the park area of Chicago is only 3,600 acres, Boston has more than 12,000, New York 8,000, Philadelphia 4,000 and Los Angeles 4,000.

Heavy Rains Cause Deluge

Black River, Wis.—Half the business section of the town and a portion of the residence section was destroyed when the swollen waters of the Black River overflowed the dam of the La Crosse Water & Power Company at Hatfield in a deluge that did damage to the amount of \$2,000,000 or \$3,000,000. Recent heavy rains were responsible for the break in the embankments of the dam when the overflow occurred. While the flood was not of the sudden, overwhelming sort that obliterated the village of Austin, Pa., at least two lives are thought to have been lost when farmhouses just below the dam were swept away. The 2000 residents of this city, however, are scattered about different parts of town and a census may disclose that others have perished.

San Diego's Flower Farm

San Diego, Cal.—This is the only city in the country that has a municipal flower farm started with the aim of providing floral and horticultural exhibits for the Panama-California International Exposition in 1915. The city officials, who are promoting the farm, found they could save hundreds of thousands of dollars by utilizing the 1700-acre tract in Balboa Park to grow flowers and it is expected many millions of plants will be ready in two years. The farm already has 1,000,000 geraniums, as many red roses, white roses and 20 acres of California golden poppies. It has 100,000 palm trees. The park consequently has become the most beautiful in colors and flowers in the country and thousands of tourists who have been passing several months in the West have made it a point to visit San Diego just to see the flower farm.

Ten-Acre Plot for Water-Front Park

Port Jefferson, N. Y.—Action was taken at the last meeting of the Business Men's Association that may result in securing for Port Jefferson a public park larger and finer than any of its kind on Long Island. The site for the proposed park is the low, marshy land in the very center of the village. It includes, approximately, 10 acres, and its location, close to the water front, makes it particularly valuable for park purposes.

No More Poster Signs to Be Erected

Washington, D. C.—The Commissioners have decided to prevent the erection of any additional boards, and have issued an order to that effect to the police. The order reads: "That no additional billboards be erected, but billboards now erected may be used until the Commissioners deem their removal necessary or desirable. That those signs which are subject to the approval of the Commissioners and are now in existence may be repainted, but neither the wording nor designs thereon may be changed." Each member of the force was furnished a copy of the order.

Private Telephone System Connects City Departments

Portland, Ind.—A private telephone system is being installed connecting the various departments of the city administration with one another. They have been without means of communication for some weeks, since the regular telephones were removed by the Home Telephone Company after the city had refused to allow its bills for service. The city had refused to pay an advanced rate of toll, and has pending a suit instituted to test the company's right to do business, alleging it to be without a franchise.

Automobile Ambulances in Use

Buffalo, N. Y.—The city's two new auto ambulances, designed for use at the Ernest Wende Hospital, have been delivered and are now in commission. Superintendent Walter S. Goodale, of the hospital, drove one of the new cars up in front of the City Hall to show its patent removable body lining, invented by him, to prevent infection in handling contagious disease cases. Five of the removable body linings will be used, one each for scarlet fever, diphtheria, measles, erysipelas and special cases. They are made of steel and can easily be removed and disinfected.

Prohibiting Erection of Any But Dwellings

St. Paul, Minn.—The Board of Aldermen at last meeting passed under suspension of rules an ordinance setting aside Summit avenue for residence purposes and prohibiting the erection thereon of buildings other than dwelling houses. The measure prohibits the erection of stores, flats, apartment buildings, garages and churches or other public buildings. Property owners who reside on Summit avenue are opposed to the erection of any building save dwellings, and they believe churches also should be placed under the ban. One of the aldermen who voted for the measure said:

"A church is a public nuisance because it is a public building. There are the clanging of bells, the crowds of churchgoers walking on nearby lawns, the weddings and funerals with the attendant carriages and automobiles which block the street, and other features which contribute to the nuisance, and they should not be permitted on Summit avenue. It should be borne in mind that church property is not taxable, and it seems almost an imposition to attempt to obtain a site for a church on property as valuable as the residential sections of Summit avenue."

LEGAL NEWS

A Summary and Notes of Recent Decisions—Rulings of Interest to Municipalities

Billboards—Reasonableness of Regulations

St. Louis Gunning Advertisement Company vs. City of St. Louis et al.—*St. Louis Ordinance No. 22,022*, providing that no billboard shall exceed 14 feet in height, and that every such board shall have an open space of at least 4 feet from the lower edge to the ground, and that none shall be nearer than 6 feet to any building or side line of any lot, or nearer than 2 feet to another billboard, and that no billboard shall exceed 500 feet in area or approach the street line nearer than 15 feet, is not in conflict either with Constitution of Missouri or Constitution of United States, both prohibiting the deprivation of life, liberty or property without due process of law, for this ordinance is not on its face unreasonable, and in view of the fact that billboards are liable to be blown down and injure pedestrians, thus rendering the city liable for damages, that billboards gather refuse and paper, rendering them liable to spread conflagrations, and that they are used as dumping places for refuse, as public privies and as hiding places for criminals.—*Supreme Court of Missouri, 137 S. W. R., 929.*

Defective Streets—Notice—Evidence.

Toomey vs. City of Henderson.—As pavements do not ordinarily sink in, evidence that grass was growing in a hole in a pavement, in which a traveler was injured, tended to show that the hole had existed long enough to permit of grass growing therein, in the absence of evidence that the pavement had suddenly sunk in, and so was sufficient to go to the jury on the question of its existence long enough for the city to have known of its existence by the exercise of ordinary care.—*Court of Appeals of Kentucky, 137 S. W. R., 1050.*

Recall of Officers—Validity

Bonner vs. Belsterling et al.—The provision in Dallas City Charter for the recall of city officers on petition and election is not violative of Constitution, guaranteeing a remedy for every injury, and empowering the Legislature to pass laws regulating the right to trial by jury and laws facilitating the investigation of breaches of duty by custodians of public funds, and providing for their suspension from office on reasonable cause shown.—*Court of Appeals of Texas, 137 S. W. R., 1154.*

Civil Service Rules—Promotion

People ex rel. Halleran vs. Creelman et al., Civil Service Commissioners.—Relator was appointed from the civil service eligible list to the position of assistant engineer in the water department, and thereafter the municipal civil service commission amended its rules and placed the position of assistant engineer in the fourth grade of the engineer service. The grades were based in part on the amount of salary allowed in each grade, and examinations were prescribed for promotion from one grade to another, and after this classification went into effect the water board increased relator's salary from \$2,000 to \$2,400 (the pay established for grade 4), and the commission refused to certify his pay roll, on the ground that it was a promotion, and that relator had not been examined and certified. Held, that the relator was an assistant engineer, whether his salary was higher or lower than that paid in grade 3, and that it was not a promotion, as relator was already an assistant, and not a competitor with those eligible to appointment, and that an application to compel a certification of his pay roll would be granted.—*Supreme Court of New York, 130 N. Y. S., 1051.*

Fire Departments—Compensation—Statutes

Gerstung vs. Sauer, Comptroller et al.—Under the act of April 2, 1891, permitting certain cities to disband volunteer fire departments and establish paid fire departments, the power given to the board of fire commissioners to fix the compensation of members of the fire department is controlled by the proviso in the section making the financial body of the city the sole judges of the amount necessary to operate the fire department.—*Supreme Court of New Jersey, 80 A. R., 993.*

Police Departments—Authority of Mayor and Council

State ex rel. Rowling et al. vs. Mayor of City of Butte.—*Rev. Codes* gives city councils power to manage the city's affairs, levy and collect taxes, fix the compensation and prescribe the duties of city employees and appropriate money for the city's expenditures; and a section requires all demands against a city to be submitted to the council for allowance and payment. Held that, since the city council has sole power to determine the amount which shall be expended in carrying on the city government, it, and not the mayor, has power to relieve members of the police force from active duty, in order to reduce the force.—*Supreme Court of Montana, 117 P. R., 604.*

Defects in Highway—Proximate Cause of Injury

Barrett vs. Mayor, etc., of Savannah.—To make a municipality liable for an injury caused by a defect in a highway, the defect need not have been the sole cause of the injury; but if, besides the defect, there was another cause not attributable to the negligence of the injured person, and which contributed directly but concurrently to causing the injury, the corporation may still be liable, provided the injury would not have been sustained but for the defect in the highway. In such case the concurrent acts of negligence of both wrongdoers, and not the separate act of either one, would constitute the proximate cause of the injury.—*Court of Appeals of Georgia, 72 S. E. R., 49.*

Ordinances—Validity—Burden of Proof

Atlantic Postal Telegraph-Cable Company vs. Mayor, etc., of Savannah et al.—Where an attack is made on the reasonableness of an ordinance because of certain extrinsic facts, the burden is on the party attacking the ordinance to prove such facts, and upon his failure to carry this burden the ordinance will not be declared invalid. In this case the plaintiff failed to carry the burden of proof.—*Supreme Court of Georgia, 71 S. E. R., 1115.*

Civil Service—Renewal—Waiver of Rights

Cooper vs. Paris et al., Board of Village Trustees.—An employee of a village, even if he had served five consecutive or successive years in the volunteer fire department of the village, and so was protected by Civil Service Law against removal from his position, except for incompetency or misconduct shown on a hearing after notice, waived his rights, he not having asserted his right to continue in the employment by reason of such service, or brought to the knowledge of the village trustees the fact of such service, but having, by filing his application for re-appointment, conceded that the right of the board to appoint existed.—*Supreme Court of New York, 130 N. Y. S., 1043.*

Annexation of Territory—Proceedings

State ex rel. Johnson vs. Clark, Mayor, et al.—Under Revised Codes, providing that the resolution of the City Council authorized by the preceding section to extend the city limits shall be published in the official newspaper of the city twice, once each week for two successive weeks, and printed or typewritten copies shall be posted in the territory proposed to be annexed, where the resolution calls for publication for three successive weeks, the fact that the notice was published in the first instance only twice, and that the notices were not posted till over three weeks after the first publication did not deprive the City Council of jurisdiction of the proceedings.—*Supreme Court of North Dakota, 131 N. W. R., 715.*

Defects in Streets—Embankment—Guard Rail

Roth vs. Highways Commission of Baltimore County.—A municipality is not required to fence its roads or put up barriers to prevent travelers from straying from the highway, but if there is a dangerous place, rendering it unsafe for travelers in the absence of a railing or barrier, the want thereof may constitute a defect; but the danger must be of an unusual character, such as a bridge, declivity, excavation, steep bank or deep water, and a space adjoining a road or street may be left without a barrier, although it is rough and entirely unsuitable for travel.—*Court of Appeals of Maryland, 80 A. R., 1031.*

MUNICIPAL APPLIANCES

Hydrant Connection

Samuel Eastman, Concord, N. H., manufacturer of the Eastman new nozzle system, Perfection holders and deluge sets, have recently placed on the market a three-way hydrant connection, shown in the illustration. This device is useful under certain circum-



THREE-WAY HYDRANT
CONNECTION

stances. For instance, if it were known that three engines would have to connect with one hydrant the first company to arrive could attach this device, then when successive companies arrived it would not be necessary to shut down the hydrant in order to connect the other engines.

Gasoline Electric Generating Outfit.

Early in the history of the gas engine attempts were made to use it to drive generators for lighting, but on account of the many problems that were encountered, chief of which was regulation, little headway was made. A gas engine-driven electric plant was usually associated with unsteady lights and more or less trouble.

The Fairbanks Company manufacture a gasoline electric generating set which is claimed to be free from these objections. The illustration shows their double-cylinder, direct-connected lighting and power set. The engine is the Fairbanks Type B, specially designed for the service. Some of the features of it worth noting are the removable valve cages, the eccentric-valve motion which secures accurate

timing; the main bearings adjustable for wear and alignment, provided with oil-retaining rings; forged steel connecting rod adjustable at both ends; either make and break or jump-spark ignition; and, generally, strong, rugged construction and high quality of workmanship.

The Standard generator, especially designed for this service, is of the four-pole direct-current type, with slotted armature. Both commutator and armature are of large diameter affording exceptionally good ventilation. The brush rigging is attached to the frame, thus affording great rigidity and easy access to the brushes, which are adjustable individually. The bearings are bronze, self-aligning and self-oiling. The magnetic frame is of cast steel of high magnetic permeability. When necessary, the generator sets operate in parallel with entire satisfaction, each set carrying its own portion of the load. Double commutator generators for operation on three-wire systems may be furnished.

The following is the report of a test made of a 10-horsepower engine direct connected to a 6½-kw. generator, in actual service. The oil was 78 deg. gravity, gasoline costing 14 cents per gallon. Duration of test was two hours. The current was 50 amperes; voltage, 119. The gasoline consumed per hour was 11.25 pints, costing 19.7 cents. The cost of fuel per kilowatt hour was \$0.033. The cost per hour for operating a 60-watt lamp was \$0.002. The efficiency of the generator was 78 per cent; horsepower developed by engine, 10.2; temperature of cooling water discharge, 170 deg. F.; temperature of room, 88 deg.; temperature of generator at end of test, 105 deg. F. The cost of operation with manufactured gas at \$1 per 1,000 cubic feet is the same. The cost per kilowatt, using manufactured gas at 27½ cents per 1,000 cubic feet, is \$0.0057.

It frequently occurs that a few lights available after the regular lighting hours would be a convenience. In such cases the installa-

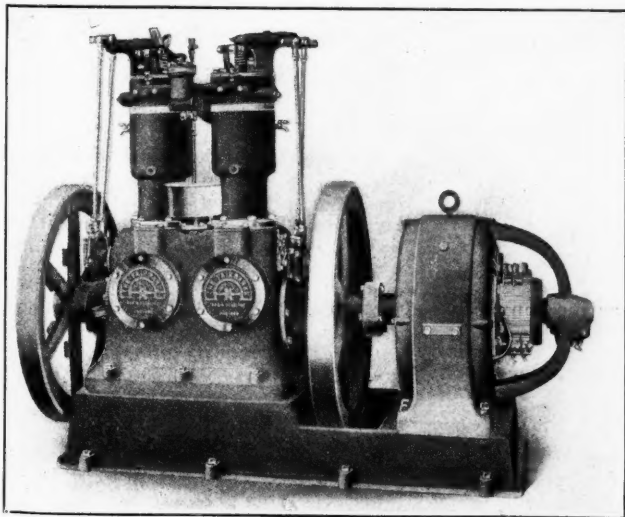
tion of a storage battery of sufficient capacity to supply the lights required is recommended. At times when the full power of the engine and generator is not required for the lights in use a surplus current is stored in the battery to be used after the engine is stopped.

Waterproof Flexible Sewer Joint Compound

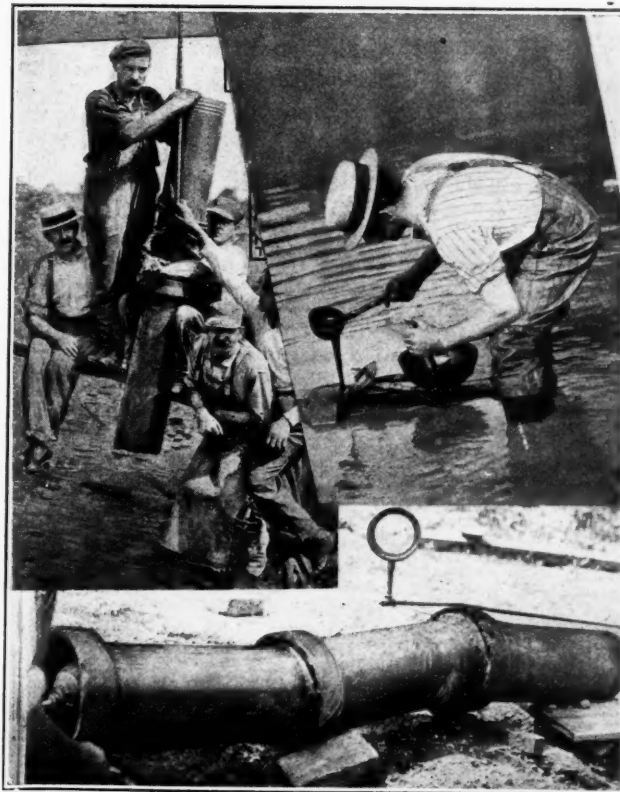
The Union Clay Products Company, 50 Church street, New York, have had on the market for two or three years a compound for jointing clay pipes of sewers in the place of the hydraulic cement more commonly used. The main purpose of the compound is to make a joint which will be watertight under all reasonable conditions. Cement joints are apt to be defective on account of the natural difficulty of doing the work and the trouble in inspecting the joints. Moreover, if the sewer pipe settles, as it often does in soft soil, the brittle nature of the cement causes a break through which water enters. The requirements of sewer construction tend to become more exacting. It is undesirable that sewage should run from the pipe into the soil, where there may be wells in the vicinity. On the other hand, it is important to exclude water from the soil running into the sewer where the sewage goes to a disposal plant or is pumped.

G. K. sewer joint compound, as the Union Clay Product Company's preparation is called, is a substance resinous in appearance, but of a viscous consistency. For use it must be heated in a kettle and poured as a lead joint is poured, using an asbestos runner. No caulking is necessary.

The illustrations show some of the advantages of the material. A joint can be poured even if the pipe is nearly under water. A line of pipe may be deflected at the joints, as shown, and still it will hold water even under pressure. The joints are so strong that they can be pulled apart only with difficulty.



FAIRBANKS GAS-DRIVEN ELECTRIC GENERATING OUTFIT



PHYSICAL PROPERTIES OF G. K. SEWER JOINT ILLUSTRATED

NEWS OF THE SOCIETIES

League of American Municipalities.—

The fifteenth annual convention was held at Atlanta, Ga., October 4-6. Mayor Winn delivered the address of welcome. He stated that Atlanta, with its suburbs, now numbered 200,000 people. He said the city had fine municipal water works, well-paved streets and progressive public works. Former Mayor Robert F. Madden seconded Mayor Wynn's words of welcome. President Darius A. Brown responded. He complimented Atlanta on its Great White Way. A paper on "Municipal Insurance Funds," by William J. Vance, Newark, N. J., was presented. The speaker explained the system established in Newark six years ago by the appropriation of a lump sum of \$100,000. The annual report of Secretary John MacVicar, Des Moines, Ia., was read. It was stated that the bureau of information had received and answered 500 inquiries during the year. The following cities were reported as new members of the league: Grand Forks, Boston, Memphis, Northfield, Man.; Columbus, Ga.; Chattanooga, Knoxville, La Porte, Ind., and Tuscaloosa. Funds received during the year amounted to \$2,634; expenditures, \$2,513.

An interesting debate occurred on Thursday morning on commission government.

Dr. J. G. Riddick, Mayor of Norfolk, Va., was the first speaker, and led the debate against commission government. Dr. Riddick believed in a one-man power, and said so in no uncertain words. "The one-man rule is the best government the world has ever known. It was given us in the beginning, and we have lived under it for 6,000 years," said the speaker. He believed that the municipal departments under a commission government, with five heads, more or less, would conflict and interfere with one another. As for the initiative, referendum and recall, he considered them more ornamental than useful.

John MacVicar, secretary-treasurer of the league and head of the public works department of Des Moines, took issue with the eloquent orator. "My friend Dr. Riddick is Mayor of Norfolk. He believes in one-man power. Well, when I was Mayor of Des Moines I believed in one-man power, too," said Mr. MacVicar, and at least three people smiled. "I have heard the question raised," he continued, "as to why we so persistently place commission government in our programs for discussion. My answer is that it is a living question, that the delegates want it on the program and ask for it. And this question of commission government is practically a question of whether or not we are going to make a business of conducting our cities' affairs or whether we are going to carry municipal government as a side-line." Mr. MacVicar told of Des Moines' experiences under commission rule. He said it had largely eliminated her party spoils system of city politics, and had made for better efficiency. It hadn't eliminated politics, he said, and he didn't think politics should be eliminated, because the conduct of a municipality had its political as well as economic side. He did not hold up commission government as a panacea, but believed it was a step in the right direction.

Referring to Dr. Riddick's declaration that the referendum, initiative and recall were mere ornaments, Mr. MacVicar quoted from a letter he had just

received from Mayor Graham, of Kansas City, in which that gentleman expressed his regret that he couldn't be present at the convention, because the people had just "recalled" him out of office. The speaker thought the trouble with most cities was not dishonesty, but grew out of the fact that the officials usually gave only part of their time to city affairs, devoting the best of it to their own private enterprises. The commission form of government, he declared, was a remedy for the inefficiency that resulted from that state of affairs. "I had rather have a rascal in office who would let me go and get my glass of beer when I want it and who would then misuse a part of my money, than to have in office a rigidly honest official who curtailed my personal liberty," declared Wilson J. Vance, of Newark, in a speech opposing commission government. Of course, it was more or less a metaphor. Mr. Vance used beer as the symbol of liberty, and argued that it would be a mistake to put the control of public customs and social morals into the hands of a centralized body of commissioners. The functions of a city government, he declared, were political and social, as well as business, and the regulation of political and social questions he declared should be handled only by a body representative of all classes of the citizens. He believed in a compromise form of charter, on broad lines somewhat like that recently rejected in the Atlanta election.

Mayor Behrman, of New Orleans, believed in a compromise form, and thought no five men should be vested with power to regulate a city's morals. Mayor Behrman, of New Orleans, thought that it was the men and not the forms of government that mean efficiency or inefficiency, honesty or dishonesty in the last analysis. He believed no general form of government could be laid down for all cities. Each had its peculiar problems, and a charter good for one would be bad for another. Mayor Behrman was a strong advocate, however, of municipal home rule. He believed the state legislatures should keep their hands off, and let the cities frame their own charters.

The following officers were elected for the ensuing year: President, John MacVicar, head of the Public Works Department of Des Moines, and former secretary-treasurer of the league; first vice-president, James J. Keeley, City Alderman, Jackson, Mich.; second vice-president, L. A. LaPonte, City Alderman of Montreal, and member of the Canadian Parliament; third vice-president, John H. Donnelly, City Alderman, Newark, N. J.; fourth vice-president, Charles S. Lambert, Mayor of East St. Louis, Ill.; secretary-treasurer, Edward Schreiter, secretary Michigan League of Municipalities, Detroit; board of trustees, Courtland S. Winn, Atlanta; Joseph Shartrell, Duluth; C. A. Williston, Gary, Ind.; Robert E. Lee, Baltimore; William Buckholtz, Kansas City; Martin Behrman, New Orleans; C. J. Brown, Winnipeg.

Buffalo was chosen as the convention city for 1912.

Probably the most important action taken by the league at the Atlanta convention was the passage of a resolution by Mayor Behrman, of New Orleans, recognizing that the league had been retrograding rather than advancing during the past few years in interest and attendance, and the passage of an amendment, offered by E. T. Melms, of Milwaukee, authorizing the new president to appoint a membership commit-

tee, with one committeeman from each State and province represented to take up the work of enlarging the membership and increasing the interest in league work.

The social features of the meeting consisted of trolley rides, receptions and a banquet.

League of Kansas Municipalities.—

The third annual convention was held at Topeka, Kan., October 11-12, at the rooms of the Commercial Club. The following program was carried out:

Wednesday, October 11, 1911, 8 to 10 a. m., reception and registration of delegates; 10 a. m., call to order by president, invocation, address of welcome, Mayor J. B. Billard, Topeka; response, Mayor F. W. Truesdell, Lyons; president's address, C. L. Davidson, Wichita; roll call of municipalities, report of Secretary-Treasurer Prof. Richard R. Price, Lawrence; appointment of auditing committee and resolutions committee; meeting of executive committee. 1:30 p. m., departmental meetings, public safety, including Police and Fire Department; Mayor J. B. Billard, Topeka, chairman; Streets and Public Improvements, Commissioner Henry Dean, Kansas City, chairman; Lights and Water, Commissioner G. C. Glynn, Iola, chairman; Finance and Revenue, Commissioner Geo. W. Winans, Hutchinson, chairman; Parks, Public Buildings and Health, Leavenworth Commissioner, chairman. 8 p. m., "The London Sliding Scale as a Method of Regulating Public Utility Corporations," Prof. G. A. Gesell, University of Kansas, Lawrence; general discussion of paper, report of special committee on uniform municipal accounting, Dr. G. C. Glynn, Iola, chairman; general discussion of report, reports from the cities.

Thursday, October 12, 9 a. m., "Kansas Municipal Legislation of 1911," Mayor C. B. Kirtland, Salina; "The Police Problem," Mayor Albert Doege, Leavenworth; general discussion, report of auditing committee, election of officers, selection of next place of meeting, "Natural Gas and the City's Official Relations to Its Public Utilities," Mayor Frank Vincent, Hutchinson; committee reports and general business. 1:30 p. m., "The Functions of a Municipal Reference Bureau," Charles H. Talbott, Municipal Librarian, Kansas City, Mo.; "Water Works and the City," Commissioner J. A. Cable, Kansas City; general discussion. 3 p. m., automobile ride over the city. 5 p. m., a short written report from each membership city of what it has that other cities ought to have. 6:30 p. m., banquet and smoker tendered to the visiting officials by the Topeka Commercial Club. 8:30 p. m., a continuation of the reports from the cities. Adjournment.

Cleveland Engineering Society.—

A special meeting of the society, Cleveland, O., was held September 26 to listen to a paper on "Smoke Prevention" by Paul P. Bird, of the Commonwealth Edison Company, Chicago, formerly Chief Smoke Inspector of Chicago. This society has recently adopted the policy of taking an interest in civic matters, especially those of an engineering character. Owing to agitation in behalf of smoke prevention, Mr. Bird's paper was especially interesting.

Engineers' Club of St. Louis.—

At the regular meeting Oct. 4, Charles W. Martin, engineer in the bridge division of the St. Louis street department, presented an illustrated paper on "Methods of Reinforced Concrete Design."

Calendar of Meetings

November 13-16.
National Municipal League.—Annual Meeting, Richmond, Va.—Clinton Rogers Woodruff, Secretary, 705 North American Building, Philadelphia, Pa.

November 15-17.
League of Nebraska Municipalities.—Annual Meeting, Omaha, Neb.—R. C. Ozman, Secretary, Lincoln, Neb.

November 20-24.
American Association for Highway Improvement.—First Annual Convention, Richmond, Va.—Logan Waller Page, President, United States Office of Public Roads, Washington, D. C.

November 24-25.
New Jersey Sanitary Association.—Annual Meeting, Lakewood, N. J.—J. A. Exton, Secretary, 75 Beech St., Arlington, N. J.

December 4-9.
American Public Health Association.—Annual Convention, Havana, Cuba.—William C. Woodward, M.D., Secretary, District Bldg., Washington, D. C.

January 29-February 3, 1912.
Second Annual New York Cement Show.—Madison Square Garden.—J. P. Beck, General Manager Cement Products Exhibition Co., 72 W. Adams St., Chicago, Ill.

February 21-28.
Fifth Annual Chicago Cement Show.—Coliseum.—J. P. Beck, General Manager Cement Products Exhibition Co., 72 W. Adams St., Chicago, Ill.

March 14-21.
First Annual Kansas City Cement Show.—Convention Hall.—J. P. Beck, General Manager Cement Products Exhibition Co., 72 W. Adams St., Chicago, Ill.

PERSONALS

CHILDS, A. T., has been appointed Assistant Professor of Electrical Engineering at University of Maine.

BIRTHWISTLE, HEZEKIAH, Acting Mayor of Englewood, N. J., died Oct. 10.

GOSS, EVERETT E., Beloit, Wis., Chief of the Beloit Fire Department, died October 3.

HAMILTON, W. C., Bayonne, N. J., City Clerk for nearly forty years, died October 6 from apoplexy.

HOOVER, CHAS. B., Columbus, O., has been appointed chief chemist, in charge of the water purification plant, by Service Director Holton.

HORTON, ROBERT E., New York, has resigned as Resident Engineer Bureau of Hydraulics, New York State Barge Canal, to devote his entire time to private practice.

KING, R. S., Arcadia, Fla., has been elected Mayor.

KITTRIDGE, R. B., has been appointed Instructor in Civil Engineering at the University of Maine.

MCCOY, CHAS. J., Marysville, Cal., has been elected Chief of Police, succeeding the late City Marshal, J. A. Mabeu.

MCKIM, ALEXANDER R., Consulting Engineer, of New York City, has been appointed by New York State Conservation Commission to investigate and report upon safety of dams for water power and reservoir purposes within the State.

MINICK, W. W., Wichita, Kan., has been elected Mayor.

MOORE, MAYOR JOHN T., Macon, Ga., was re-elected by a majority of nearly 1174 votes over Alderman Brunner.

RICE, MAYOR FRANK J., New Haven, Conn., has been re-elected by largest plurality given in years to candidate for mayor.

TWITCHELL, V. N., Jennings, La., has been appointed Mayor.

VAN NUYS, FRED, Anderson, Ind., former prosecutor of Madison County, has resigned as President of the Police Board of city. He is succeeded by Carl Stephens, who was appointed by Mayor Foster. Dr. C. G. Whitledge will become President of the Board.

INDUSTRIAL NEWS

Cast Iron Pipe.—Pipe companies have recently been very large purchasers of pig iron. Chicago: It is expected that the low price of pig iron will lead many cities to engage pipe for spring delivery. Quotations: 4-inch, \$26; 6 to 12-inch, \$24.50; 16-inch and up, \$24. Birmingham: The movement from local plants has been very heavy and a good tonnage in small lots has been placed. The general outlook is considered good. Quotations: 4 to 6-inch, \$23; 8 to 12-inch, \$22; over 12-inch, average \$21. New York: Business in small lots is fairly active. Quotations: 6-inch, car loads, \$21 to \$22.

Lead.—Two reductions in price of lead have been made. Quotations: New York, 4.25c.; St. Louis, 4.15c.

Reinforcing Bars.—The Corrugated Bar Company announces that its headquarters will be removed October 14 from St. Louis, Mo., to Buffalo, N. Y., where it will occupy the third and fourth floors of the Mutual Life Building. The change in headquarters has been decided upon as the company's stock warehouse and fabricating plants are located near Buffalo, and customers can thus be given better and more prompt service in the handling of orders. District offices will be maintained in the National Bank of Commerce Building at St. Louis, as well as in New York and Chicago.

Combination of Cement Manufacturers.—A merger of all the larger cement manufacturing plants in Missouri, Nebraska, Kansas, Oklahoma, Iowa and other states west of the Mississippi River has been proposed. The plan was presented to the directors of the Bonner Brand Portland Cement Company in Bonner's Springs, Kas., by Henry McGrew, of Kansas City, general manager of the company. The plan is to merge all the plants under one and pay each individual company for its plant 50 per cent in stock and 50 per cent in bonds of the new corporation. A committee has been selected to make the appraisal of the plants, and it is understood many of them have agreed. Cement prices have been low the last year because of overproduction and competition. There are now 44 cement plants in the West. The competition for business is strong. The idea of the merger is to curtail productions so the prices will recover. Some manufacturers say they have been operating at a loss.

Commercial Register.—The twentieth annual edition (1911) of Hendrick's Commercial Register has been published by S. E. Hendricks Co., 74 Lafayette street, New York. The present edition contains 35,000 names and addresses of commercial firms and upward of 37,000 classifications. The classification is by subject. The method of using the register is as follows: Suppose a person wishes to know who manufacture steam road rollers. He looks in the index under the subject "Steam road rollers," and finds that it is subject No. 9748. Turning to the body of the book at this number he finds the names and addresses of 15 manufacturers. Previous to this year the subjects were referred to by pages. In the 20th edition the subject numbers are carried along through the pages in full-faced type. This saves time in hunting for articles in cases where a number of subjects are indexed on a single page.

New York Cement Show.—The National Builders' Supply Association have just decided to hold their next annual convention in New York City in conjunction with the second annual New York Cement Show, Madison Square Garden, January 29-February 3.

National Pavement.—The Kansas City Testing Laboratory has made a very favorable report on the properties of the "National Pavement" made by the Bituminized Road Co., 417 Reliance Building, Kansas City, Mo. The company has a newly designed self-propelling road machine which in one operation, beats, dries and pulverizes the material found in a roadway and mixes it with an asphalt binder.

Paper Letters and Figures.—The Tablet and Ticket Co., 381 Broadway, New York City, manufacture paper letters and figures gummed on the back. These letters and figures are used extensively in making placards for the New York Municipal Budget Exhibit. The letters and figures of various sizes are made of highly finished enameled waterproof paper, either white, black or red, and they are heavily gummed with the best fish glue. If put on with ordinary care and rubbed down well they make permanent labels or numbers. When put directly on a drawer or file they are much neater than a paper label, and one great convenience is that with a box of these a new label can be put on at any time wanted without sending for printer or painter.

Diesel Engines.—The Busch-Sulzer Bros.-Diesel Engine Company, controlling the Diesel crude-oil motor patents for the United States, has optioned land for a plant in St. Louis. The company has a capital stock of \$2,100,000, and succeeds the American Diesel Engine Company. It is controlled by the Busch brewing interests. Construction of the plant will begin with the closing of the land deal. It will provide work for 600 employees when completed.

Crushing Plant.—The Hillman Sand Company, Limestone, Ky., will install a rock-crushing outfit with a capacity of 200 tons a day. The company was recently organized with \$10,000 capital stock. C. W. Hillman is president and general manager.

Crane.—The Luitwieler Pumping Engine Company, Rochester, N. Y., is in the market for a 10-ton crane, electric or steam, for its new plant now under construction.

Calcium Chloride.—The Solvay Process Company, manufacturers of calcium chloride and other chemicals, Detroit and Solvay, N. Y., has increased its capital stock from \$8,000,000 to \$10,000,000.

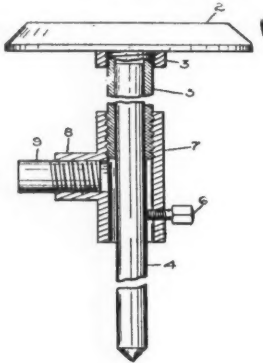
Receivership.—Judge Carpenter, in the United States District Court, Chicago, Ill., has appointed Edwin Buell receiver for the Peter Brothers Paving Company, of Dayton and Springfield, O., and Chicago. A petition asking the appointment of a receiver was filed by the Sun Company of Toledo, and other creditors. They charged that in the last four months the company made payments to preferred creditors.

Wood Paving.—The United States Department of Agriculture has published a reprint of Circular 141 of the Forestry Service, by C. L. Hill. The original bulletin was dated December, 1907.

PATENT CLAIMS

1,001,188. MARKER FOR UNDERGROUND-CONDUIT CONNECTIONS. David E. Olds, Newark, N. J. Serial No. 589,665.

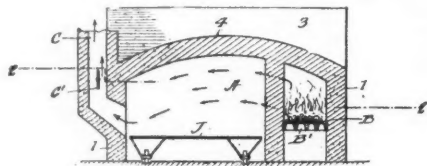
A marker for underground conduit connections, comprising sections held in alignment and adjustable longitudinally with respect to each other, whereby the lower end of the marker may be placed at the con-



nection to be marked and the upper end located at the surface of the ground, means for releasably setting said sections against longitudinal adjustment, and identifying means at the top of said marker.

1,005,743. GARBAGE CREMATORY. Ralph E. Nye, Hobart, Okla. Serial No. 622,983.

A crematory, substantially as described, comprising an incinerating chamber, a fire box alongside the front end of the said chamber and discharging at its rear end into the chamber at the rear end of the latter, chimneys leading from the incinerat-



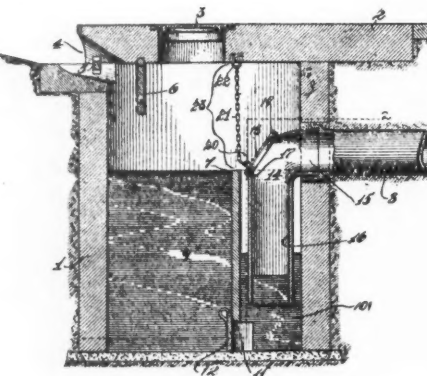
ing chamber near the front and rear ends thereof and at the opposite side from the fire box whereby the gases from the fire box may be directed either transversely of the rear of the incinerating chamber or across the incinerating chamber and toward the front end of said chamber, dampers in said chimneys, doors controlling the end of the incinerating chamber and a car for supporting the material to be burned movable into and out of the incinerating chamber, substantially as set forth.

1,005,617. CART. Arthur N. Doud, Cleveland, Ohio. Serial No. 578,807.

A cart including in combination, supporting wheels, a receptacle pivotally supported by said wheels and having its delivering side terminating within the periphery of said wheels, a delivering spout forming an extension of the delivering side of said receptacle, and means for detachably connecting said spout to said receptacle.

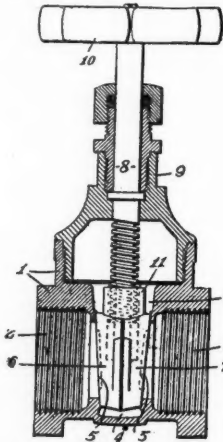
1,005,371. CATCH-BASIN. Frank L. Union, New York, N. Y. Serial No. 609,125.

In a catch basin, the combination of a chamber, provided with an inlet-mouth, a partition in said chamber, back of said mouth, and an outlet pipe extending downwardly into the space behind said partition, said outlet pipe having a valve-controlled relief opening located at the approximate level of the upper edge of said partition.



1,005,165. GATE VALVE. William Edward Crist, Syracuse, N. Y., assignor to Oliver M. Edwards, Syracuse, N. Y. Serial No. 573,660.

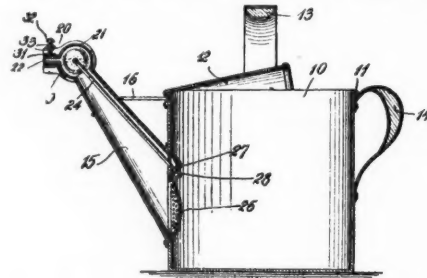
In a gate valve, a pair of opposing valve disks, one being provided with an engaging part, and one of the disks being provided with bearing studs on opposite sides of the axial line of said engaging part, each of the



studs having its free end formed with surfaces diverging in opposite directions from substantially the center thereof toward the base of the stud in a plane parallel to said axial line, portions of said surfaces at the free extremities of the studs converging toward the bases of the studs from inner parts of the studs toward outer sides thereof in a plane disposed at substantially right angles to said axial line, and the other disk being provided with bearing sockets for coacting with the free ends of the studs, said sockets having surfaces complementary to the opposing surfaces of the studs, and operating means including a stem coacting with said engaging part, substantially as and for the purpose set forth.

1,005,582. POURING-POT. William P. Tarrant, Saratoga Springs, N. Y. Serial No. 573,005.

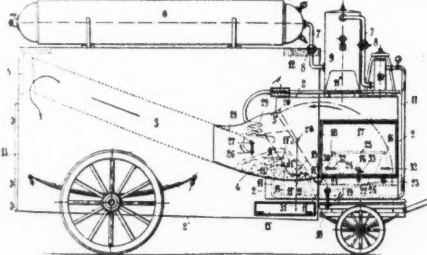
A pouring pot comprising a receptacle, a spout projecting therefrom, a strainer plate over the lower end of said spout, a casing



on the upper end of the spout, said casing being constructed of sheet metal and arranged to form a distributing chamber, and a slot-like nozzle communicating with said chamber; removable end-plates over the ends of said casing and nozzle, and a holding member arranged to hold said end-plates and strainer plate in place.

1,005,168. APPARATUS FOR THE REMOVAL OF HOUSEHOLD OR OTHER REFUSE. Ferdinand Dassy, Rouen, France. Serial No. 573,065.

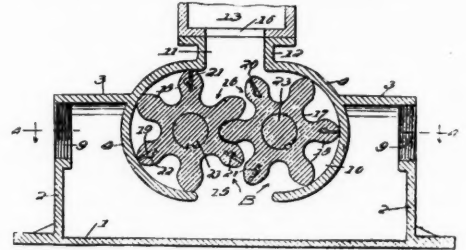
Apparatus for collecting refuse comprising a closed casing, a compressed air tank carried thereby, a conduit lying wholly



within said casing, means for depositing the waste material in the mouth of said conduit and means for discharging compressed air from said tank into said conduit adjacent such material, whereby the material is driven through the conduit into the casing.

1,005,586. ROTARY PUMP CASING FOR AUTO FIRE APPARATUS. Albert C. Webb, St. Louis, Mo., assignor to The Webb Motor Fire Apparatus Company, St. Louis, Mo., a Corporation of Delaware. Serial No. 637,741.

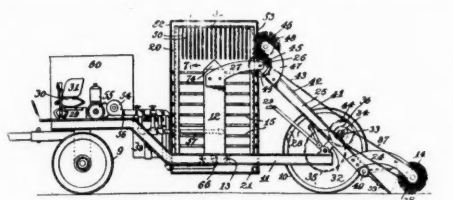
A pump comprising, in combination, a case consisting of connected side, end, top and bottom walls, the end walls having inlet openings formed therein; a chamber arranged interiorly of said case consisting of a pair of oppositely curved walls located



between and connected to the side walls of the case, and a pair of heads secured to said side walls, said curved walls having their respective upper and lower walls spaced apart to produce inlet and outlet passages; a pair of brackets disposed upon opposite sides of said case and secured directly to said heads; pumping mechanism disposed within said chamber and including a pair of driving elements journaled in said brackets; and means for operating said pumping mechanism.

1,004,113. SNOW-MELTING APPARATUS. Garry P. Van Wye, New York, N. Y. Serial No. 585,994.

A snow-melting apparatus comprising a melting chamber, means to pass snow



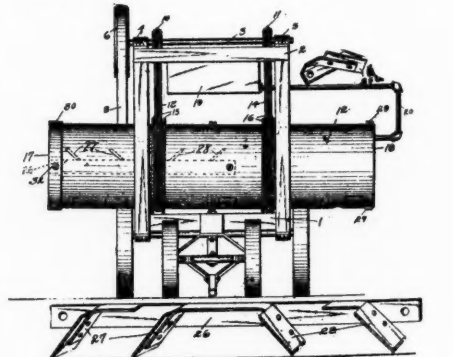
thereinto in finely separated particles, and means to apply heat to said particles while separated.

1,005,618. BOTTOM-DUMPING HOISTING BUCKET. Arthur N. Doud, North Stockholm, N. Y., assignor to S. S. Saffold, Cleveland, Ohio. Serial No. 586,568.

A bucket open at its top and bottom, door sections for the open bottom separately pivoted on the bucket to swing inwardly and outwardly to closed and open positions, a swinging lever element fulcrumed on the bucket, links pivotally connected directly with the lever element and the door sections at such points to cause both sections to open simultaneously and at the same rate, the lever element being arranged to act through the links to pull the door sections open as the lever element moves downward and to push the sections closed as the lever element moves upward, and an automatic latch for locking the door sections in their closed position.

1,004,586. CONCRETE MIXER. Osler Isaac Overturf, Dumont, Iowa, assignor to Louie H. Overturf and Milton Schuler, Dumont, Iowa. Serial No. 576,738.

A deflector for mixing drums, consisting of an angle bar having a main body portion and a flange portion at substantially right angles thereto, said flange portion having a plurality of sections cut out and bent laterally at a suitable angle to form mixing blades, each section being provided with an enlarged contact portion.



THE WEEK'S CONTRACT NEWS

Relating to Municipal and Public Work—Street Improvements—Paving, Road Making, Cleaning and Sprinkling—Sewerage, Water Supply and Public Lighting—Fire Equipment and Supplies—Bridges and Concrete Work—Sanitation, Garbage and Waste Disposal—Police, Parks and Miscellaneous—Proposals and Awards.

To be of value this matter must be printed in the number immediately following its receipt, which makes it impossible for us to verify it all. Our sources of information are believed to be reliable, but we cannot guarantee the correctness of all items. Parties in charge of proposed work are requested to send us information concerning it as early as possible; also corrections of any errors discovered.

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO.
STREET IMPROVEMENTS				
Indiana.....	South Bend.....	Oct. 20, 10 a.m.	Constr. grade, curb and walk on O'Brien Street.	O. C. Bastian, Chm. Bd. Pub. Wks.
Indiana.....	Fort Wayne.....	Oct. 21, 10 a.m.	Building approaches to several bridges.	C. H. Brown, County Auditor.
Pennsylvania.....	Swissvale.....	Oct. 21, 7 p.m.	Grading, paving and curbing Palmer Street.	E. M. Watt, Supt. Pub. Wks.
Wisconsin.....	Racine.....	Oct. 21, 10 a.m.	Grading River street.	P. H. Connolly, Chm. Bd. Pub. Wks.
New York.....	New York.....	Oct. 23, 2 p.m.	Repairing sidewalks.	Geo. McAneny, Borough President.
Arkansas.....	Little Rock.....	Oct. 24, noon.	Paving 29 blocks of street with asphalt.	W. C. Foster, Secretary.
Nebraska.....	McCook.....	Oct. 24, 2 p.m.	Grading on the through county road.	Chas. Skalla, County Clerk.
Ohio.....	Cadiz.....	Oct. 24.	Grading and macadamizing 1.31 miles of road, cost \$11,047.	State Highway Commissioner.
Ohio.....	Cleveland.....	Oct. 25, 11 a.m.	Grading, draining and improving South Woodland Road No. 2.	John F. Goldenbogen, Clerk.
New York.....	Buffalo.....	Oct. 25, 11 a.m.	Paving and repaving several streets.	F. G. Ward, Comr. Bd. Pub. Wks.
New York.....	New Rochelle.....	Oct. 26.	Grading Sicksle Place.	R. Lathers, Jr., Chm. Bd. Pub. Wks.
Ohio.....	Cincinnati.....	Oct. 27, noon.	Improving Montauk Road.	Fred Dreihls, Clk. Bd. Co. Comrs.
Florida.....	Jacksonville.....	Oct. 27, 10 a.m.	Grad. Pensacola Road and clear, grubbing; pav. 3 other streets.	Gail L. Barnard, Co. Engr., Bd. Com.
Connecticut.....	Hartford.....	Oct. 30, 11 a.m.	Furn. crushed stone to street dept. for period of 5 years from January 1, 1912.	Bd. Contract & Supply.
California.....	Covina.....	Nov. 1.	Constr. oil macadam roadway with concrete curb and gutter.	F. T. Dessery, City Engineer.
West Virginia.....	Huntington.....	Nov. 1, 1 p.m.	Paving with vitrified brick several streets and avenues.	Board Commissioners.
Arkansas.....	Pine Bluff.....	Nov. 1, 2 p.m.	Constr. 20,000 yds. treated wood block pavement, 10,000 ft. combined curb and gutter.	Comrs. Pav. Dist. No. 27.
Rhode Island.....	Newport.....	Nov. 4, 11 a.m.	Furn. vit. brick pav't at U. S. Naval Torpedo Sta., Newport.	R. C. Hollyday, Chief Bureau Yards and Docks, Navy Dept., Washington, D. C.
Indiana.....	W. Terre Haute.....	Nov. 6, 8 p.m.	Constr. 6,396 yds. brick, wooden block, asphalt and bitum. pave.	W. R. Paige, Engr., Jacob Krackenberg, Pres. Town Board.
Louisiana.....	Lake Charles.....	Nov. 7, 8 p.m.	Constr. concrete curb and 5-ft. cement sidewalks.	City Engineer.
Ohio.....	Cleveland Hghts.....	Nov. 7, noon.	Improving Highland Road by paving with brick asphalt or macadam, grading, draining, etc.	H. H. Canfield, Village Clerk.
Florida.....	Pensacola.....	Nov. 7.	Constructing 14 miles pavement.	Board Trustees.
Indiana.....	Logansport.....	Nov. 7, 10 a.m.	Constructing 1 gravel and 1 macadam road.	J. E. Wallace, Co. Aud.
Brazil.....	Rio Grande.....	Nov. 12.	Constructing paving, drainage system and water works.	Mayor.
Texas.....	Sanderson.....	Nov. 13, noon.	Constructing 1,840 ft. concrete curb or wall.	County Commissioners.
Texas.....	Sanderson.....	Nov. 13.	Construction roads.	Commissioners' Court.
Illinois.....	Monmouth.....	Nov. 15.	Constr. 9,300 sq. yds. brick paving on a gravel base with concrete gutter on 1st. Ave.; also 5,400 sq. yds. brick paving on gravel base with concrete gutter on B. Street.	City Council.
Pennsylvania.....	Glassport.....	Dec. 9, 8 p.m.	Grading, paving and curbing Arch Street.	M. E. Randell, Boro. Clerk.
Indiana.....	Laporte.....	Jan. 11, 1912.	Constr. asphalt concrete pavement on Pine Lake Ave.	W. Krueger, Clerk.
SEWERAGE				
Idaho.....	Payette.....	Oct. 20.	Constr. 16,700 ft. of 6 to 15-in. vitrified sewer pipe.	Committee on Sewers.
Indiana.....	Evansville.....	Oct. 21, 10 a.m.	Constr. 2 sewers, 12 to 24-in. pipe.	S. A. Bartholome, Clk. Bd. P. W.
Minnesota.....	Wheaton.....	Oct. 21, 10 a.m.	Constructing judicial ditch No. 4.	J. T. Erickson, County Auditor.
Illinois.....	Hammond.....	Oct. 24, 2 p.m.	Constructing underground system of drainage.	Board Local Improvements.
Oklahoma.....	Muskogee.....	Oct. 24, 10 a.m.	Constructing brick and 8-in. clay pipe sewer.	Chas. Wheeler, Jr., City Clerk.
Massachusetts.....	New Bedford.....	Oct. 24, 8 p.m.	Laying pipe and castings for outfall sewer.	Mayor.
Maryland.....	Baltimore.....	Oct. 25, 11 a.m.	Constr. Jones Falls Conduits, section 2 storm water contract 16.	Board of Awards.
New Jersey.....	Summit.....	Oct. 31.	Constructing sewer.	Common Council.
Tennessee.....	Jellico.....	Nov. 1, 2 p.m.	Constr. 5.7 miles of 8 to 15-in. pipe sewer.	W. G. Kirkpatrick, Jackson, Miss.
Iowa.....	Burlington.....	Nov. 20.	Constr. 770 ft. 9-in. pipe sewer and 500 ft. 8-in. also 4 manholes.	A. B. Mahan, Secy. Jellico, Tenn.
Illinois.....	Edwardsville.....	Mar. 1.	Constr. about 3,000 ft. of 8 to 18-in. pipe sewers.	City Clerk.
WATER SUPPLY				
Minnesota.....	Grand Rapids.....	Oct. 20, 8 p.m.	Constructing water tower and tank.	C. H. Dickinson, Pres. Commission.
Nebraska.....	Loup City.....	Oct. 23, noon.	Digging and filling ditch for water main.	P. T. Rowe, City Clerk.
North Dakota.....	Washburn.....	Oct. 23, 8 p.m.	Constr. 3,200 lin. ft. 6-in. water mains for city.	H. S. Westmiller, City Auditor.
Nebraska.....	Leigh.....	Oct. 23.	Boring artesian well.	Village Clerk.
Wisconsin.....	South Wayne.....	Oct. 24.	Constr. system water works comprising pumping machinery, deep well tower and tank power house and distributing system 6,000 ft. long.	Village Board.
Wisconsin.....	Monticello.....	Oct. 24.	Furnishing 1 triplex power pump, belt driven to operate against static pressure of 67 lbs.; capacity at least 5 gals. per revolution of crank shaft.	E. W. Van Norman, Village Clerk.
Brit. Columbia.....	Vancouver.....	Oct. 25, 5 p.m.	Furn. supply of meters for period of 1 year from Nov. 1, 1911 to Oct. 31, 1912.	D. G. Tate, City Clerk.
Washington.....	Wapato.....	Oct. 25.	Furn. material and constr. 10-in. drilled well and conc. pump pit.	City Clerk.
New York.....	Kings Park.....	Oct. 25, 3 p.m.	Furnishing 3 water tube boilers at State Hospital.	T. E. McGarr, State Com. in Lunacy.
Montana.....	Wisdom.....	Oct. 31, 8 p.m.	Constructing framework for flume.	Trail Creek Water Co.
Ohio.....	Cleveland Hghts.....	Oct. 31, noon.	Constr. 6-in. water main in Edendale Street.	H. H. Canfield, Village Clerk.
New York.....	New York.....	Oct. 31, 11 a.m.	Constr. Bay Ridge Conduit, portion of Catskill Aqueduct (con. 75).	Chas. Strauss, Pres. Bd. W. Supply
Tennessee.....	Jellico.....	Nov. 1, 2 p.m.	Constr. 12½ miles 3 to 10-in. mains, 500,000 gal. reinforced concrete reservoir.	A. B. Mahan, Secy. Commissioners
India.....	Howrah.....	Dec. 1, 4 p.m.	Furn. 2 triple expansion engines coupled to centrifugal pumps, capacity 8,000 gals. per minute.	W. G. Kirkpatrick, Eg., Jackson, M
Australia.....	Queens'd, Brisb.....	Jan. 30, noon.	Furnishing a 6 million gallon pumping plant of 2 or 3 units.	C. F. Payne, Chm. Municipal Comrs.
BRIDGES				
Idaho.....	Blowout.....	Oct. 21, 10 a.m.	Constructing state line bridge.	Bridge Comrs, Idaho Falls, Idaho.
Mississippi.....	Vicksburg.....	Oct. 21.	Constructing bridge, cost \$12,000.	A. M. Paxton, City Clerk.
Colorado.....	Denver.....	Oct. 21.	Constructing steel bridge at Maroon Creek.	C. W. Comstock, State Engineer.
Ohio.....	Toledo.....	Oct. 24.	Constructing substructure and superstructure of a bump or automatic swing bridge on county road.	Chas. J. Sanzenbacher, County Aud
New York.....	Albany.....	Oct. 24, noon.	Constr portion of bridge crossing Hudson River at Schuylerville, Contract 88.	C. E. Treman, Supt. Pub. Wks.
Ohio.....	Cincinnati.....	Oct. 27, noon.	Building bridges and culverts on Wooster Pike.	Fred Dreihls, Clerk.
Ohio.....	Cincinnati.....	Oct. 27.	Building bridges and culverts.	County Commissioners.
Minnesota.....	Olivia.....	Oct. 30, 3 p.m.	Constructing bridge work.	B. C. McEwen, Chm. Co. Comrs.
Texas.....	Angleton.....	Nov. 1, noon.	Constructing 2 bridges over Brazos River.	Commissioners Court.

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO.
BRIDGES (Continued)				
Arkansas.....	Harrison.....	Nov. 1.....	Constr. steel bridge across Crooked Creek consisting of 2 spans totaling a length of 250 ft.; cost \$4,000	City Council.
Kansas.....	Leavenworth.....	Nov. 6, noon.....	Repairing several bridges and constructing concrete culvert.	J. A. Hall, County Clerk.
Texas.....	Houston.....	Nov. 20, noon.....	Constr. 2 reinforced concrete bridges over White Oak Bayou.	Dan C. Smith, Jr., City Compt.
LIGHTING AND POWER				
New Jersey.....	Jamesburg.....	Oct. 20, 2:30 p.m.....	Installing additions to heating plant.	Commissioner Charities.
California.....	Los Angeles.....	Oct. 20.....	Equipm. San Francisco Power house, capacity 30,000 h. p.	E. F. Scattergood, Chief Engineer.
Dist. of Col.....	Washington.....	Oct. 21.....	Installing lighting fixtures in public bldgs. in several cities.	J. K. Taylor, Superv. Arch.
New York.....	New York.....	Oct. 23, 2 p.m.....	Install. elec. light. and power fixtures in city court building.	Geo. McAneny, Boro. President.
Massachusetts.....	Boston.....	Oct. 24, noon.....	Furnishing and erecting gas post extensions and installing inverted gas lamps on certain streets.	L. K. Rourke, Comr. Pub. Wks.
Kentucky.....	London.....	Oct. 25, 3 p.m.....	Supplying gas engine and electric generator.	J. K. Taylor, Sup. Arch., Washington, D. C.
Ohio.....	Cleveland.....	Oct. 27, noon.....	Constructing addition to power house.	Chas. E. Thorne, Dir. Wooster, Ohio.
Illinois.....	Champaign.....	Nov. 4.....	Lighting streets with gas or electricity.	Wm. Coughlin, Mayor.
Virginia.....	Arlington.....	Nov. 11, 11 a.m.....	Installing hot water heating system in wireless station bldgs.	Bureau of Yards & Docks, Navy Dept., Washington, D. C.
Dist. Columbia.....	Washington.....	Dec. 18.....	Gas franchise for city of Manila for 50 years.	B. of I. A., War Dept., Wash., D.C.
Australia.....	Brisbane.....	Jan. 30, noon.....	Designs, supply and erection at Mount Crosby Pumping Station of alternatively one, two and three complete units consisting of power generating pumps and plants, etc.	Geo. Johnston, Albert St., S.&W.Bd
MISCELLANEOUS				
Ohio.....	Cleveland.....	Oct. 20, noon.....	Furnishing and delivering 1,200 European Sycamores, 300 American Elms and 500 Norway Maples for Forestry Dept.	A. B. Lea, Dir. Pub. Service.
Illinois.....	Chicago.....	Oct. 20, noon.....	Furnishing smallpox vaccine.	G. B. Young, Comr. of Health.
Tennessee.....	Erwin.....	Oct. 21, 1 p.m.....	Constructing county jail.	Jail Committee.
Ohio.....	Cleveland.....	Oct. 24, noon.....	Furnishing pumps for fire service pumping station.	A. B. Lea, Dir. Pub. Service.
Kansas.....	Ft. Leavenworth.....	Oct. 25.....	Furnishing 950 ft. lead sheet cable, 750,000 c.m., 2 circuit breakers, 12 wrought cop. terminals and record. water meters	Capt. F. W. Van Dwyne, O.M., U.S.A.
New York.....	Utica.....	Oct. 25.....	Furn. and erecting 6 steel fire escapes at State Hospital.	U. S. Military Prison, Ft. L'worth.
New Jersey.....	Newark.....	Oct. 26, 4:15 p.m.....	Renewing of expiring fire insurance policies.	State Com. in Lun., Albany, N. Y.
Connecticut.....	Hartford.....	Oct. 30, 11 a.m.....	Furnishing crushed stone to the street department for period of five years from Jan. 1, 1912.	R. D. Argue, Secretary.
California.....	San Francisco.....	Nov. 1, 3 p.m.....	Furnishing and delivering 43 double and pay-as-you-enter type, closed steel motor cars complete: 4 extra trucks complete with axles, wheels and motors.	Jos. Butts, Secy. Bd. Cont. and Sup.
New Mexico.....	Albuquerque.....	Nov. 6, 8 p.m.....	Furnishing triple combination automobile chemical fire engine and hose wagon.	Board Public Works.
				J. B. McManus, City Clerk.

STREET IMPROVEMENTS

Anniston, Ala.—Calhoun County Commissioners are considering election for voting on issuance of \$350,000 of good road bonds.

Meridian, Cal.—Improvement of various streets is being planned and extension of Third st.

Oakland, Cal.—Resolutions providing for miscellaneous street work have been passed. **Idaho Springs, Colo.**—Highway into Denver will be improved at once.

Washington, D. C.—Commissioners have ordered various street improvements.

Brooksville, Fla.—Bonds have been sold to First National Bank, and city will use proceeds for construction of sidewalks.

Callahan, Fla.—Board of Trade has appointed committee to arrange for petition to County Commissioners to hold election to create special road district and to bond it to build some fifty or sixty miles of sand-clay hard surface roads and bridge. Most important piece of road will be that from Thomas Creek to St. Marys River.

Jacksonville, Fla.—County Commissioners have ordered advertisement for bids for paving Lincoln ave. with concrete.

Evansville, Ind.—Petition to widen Decker rd., from lower Mt. Vernon rd. to new Vulcan Steam Shovel plant, has been filed with County Commissioners by officers of company.

Fort Wayne, Ind.—Board of Public Works will adopt resolutions for opening of 4th st., from Clinton st. to Spy Run ave. **Jonesboro, Ind.**—Widening of Water st. been authorized.

Fort Scott, Kan.—Ordinance has been passed providing construction of grading and paving portion of alley between National ave. and Judson st.

Fort Scott, Kan.—Ordinance has been passed providing for issuing of internal improvement bonds to pay for grading, paving, curbing and guttering of portion of Oak st., Wall st. and various other streets.

Fort Scott, Kan.—Ordinances have been passed providing for grading, paving and curbing of portion of Pine st. and alley between Main st. and Scott ave.

Hutchinson, Kan.—County road two miles southwest and one and one-half miles south of Nickerson will be rebuilt.

Louisville, Ky.—Board of Public Works has ordered plans and specifications prepared at once for letting of bids for reconstruction of Walnut st., from 24th to 26th sts.; Market st., from 28th st. and Fehr ave., or Green st., from Shelby to Campbell sts., with asphaltum. The work will cost approximately \$22,000.

Louisville, Ky.—Plans and specifications for reconstruction of Brook, from Walnut to Chestnut sts., are being prepared by William McFarland, Superintendent of

Streets. Work will cost \$6,700. Alley, between Walnut and Madison, also will be reconstructed with vitrified block at cost of \$1,500. **Andrew Kast**, Superintendent of Sewer and Drain Department, will soon begin construction of sewer in Madison st., from 24th to 26 sts., to cost about \$1,900.

Boston, Mass.—City will borrow \$2,885,000 for public improvements; \$300,000 will be used for new highways.

South Lowell, Mass.—South Broadway will be paved with granite.

Springfield, Mass.—Widening of Vernon st. by 10 ft. is being discussed.

Grand Rapids, Mich.—Commissioners are considering cost of improving 152 miles of roads in county; estimated cost, \$450,000.

Saginaw, Mich.—Special elections for bonding for good roads will be held Oct. 17 in Township of Birch Run and Bridgeport.

Eveleth, Minn.—City Engineer has submitted estimate for cost of laying and furnishing material for proposed 8,345-ft. walk to Genoa location, which amounted to \$3,452. He also furnished estimate for sewer on Roosevelt ave., which will cost \$2,717.50.

Gulfport, Miss.—Board of Supervisors has ordered election to be held Nov. 18 for voting of \$75,000 bond issue for road purposes.

Omaha, Neb.—Ordinance has been passed providing for paving of Locust st., from 20th st. boulv. to 24th st.

Beverly, N. J.—Election will be held in November for voting on \$40,000 bond issue for paving and curbing various streets.

Camden, N. J.—Ordinances have been passed directing paving of Broadway, from Federal st. to Market st., with 2-in. asphalt on 6-in. concrete foundation; 19th st., from intersection of River ave. to easterly side of Hayes ave., with Belgian blocks; Lester terrace, from Broadway to 6th st., with asphalt on 4-in. concrete foundation.

Collingswood, N. J.—Plans prepared by borough engineer for brick gutters and macadam streets have been approved of by Council.

Matawan, N. J.—Resolution has been passed at Borough Council directing clerk to advertise for bids for laying of cement or blue flag sidewalks in Main st.

Millville, N. J.—Council is considering ordinance for bond issue for purpose of paving High st.

Mount Holly, N. J.—Council has decided to put \$25,000 road proposition on ballot at coming election.

New Brunswick, N. J.—Widening of Albany st. is being discussed.

Newark, N. J.—Ordinance has been passed providing for paving of Washington ave., from Springfield ave. to Madison ave.

Long Island City, N. Y.—Petitions have been approved of for grading and laying sidewalks on great number of streets.

Long Island City, N. Y.—Board of Public Works has authorized following improvements: To pave with asphalt block on concrete foundation Graham ave., from 2d ave. to Steinway ave., eight blocks; estimated cost, \$31,500; also Freeman ave., from Crescent st. to Jackson ave., \$31,500; Wilbur ave., from William st. to Academy st., \$9,600; and Beebe ave., from William st. to Academy, four blocks, \$16,000.

Utica, N. Y.—Tentative plan for extension of Hickory st. through grounds of Utica State Hospital from York st. to Champlain rd. has been prepared by City Engineer Cogley and submitted to managers of State Hospital.

Raleigh, N. C.—Hillsboro st. will be widened. Sewer system will be extended. Sum of \$500 has been appropriated to pay services of engineer to report on water supply.

Muskogee, Okla.—Resolutions have been passed providing for grading, paving, etc., of various streets.

Medford, Ore.—Voters of Jackson County have voted in favor of \$1,500,000 bond issue for good roads.

Erie, Pa.—Council has passed 16 ordinances for paving and building sewers.

Harrisburg, Pa.—Applications for construction of 78 mile roads with State aid have been filed.

Lehigh, Pa.—Council has voted to issue bonds in sum of \$9,000 for repairing main thoroughfares of town.

Philadelphia, Pa.—Construction of thoroughfare running in northeasterly direction from city hall to connect with Richmond st. is being discussed; also widening of principal streets and various other improvements.

St. Marys, Pa.—Borough has applied for State aid for construction of 14,380 ft. of road.

York, Pa.—Ordinance is being considered providing for appropriation of \$1,000 to pave intersection of Philadelphia and Newberry sts.

Bristol, Tenn.—Sullivan County is considering expending additional \$200,000 for improvement of roads.

Johnson City, Tenn.—County Court of Washington County has authorized issuance of \$60,000 in bonds to be used in building Washington link in Memphis-to-Bristol highway.

Loudon, Tenn.—County Court has voted to issue and sell \$25,000 for improvement of roads of county.

Brownsville, Tex.—Paving and other bond issues recently authorized have been sold to Kansas City firm for par and accrued interest. Various issues amount to \$145,000, and besides paving includes improvements for water and light plant and public market house.

Newport, Tenn.—Bids will be received until 2 p. m. Oct. 28 by Geo. W. Gorrell, Secretary of Commission, for purchase of \$100,000 road bonds.

Dallas, Tex.—Resolutions for paving several streets have been passed.

El Paso, Tex.—City is considering paving of Cotton ave. and also of continuing same through Highland Park as far as city limits.

Fort Worth, Tex.—Plans are being made for extensive street paving.

Houston, Tex.—Bond issue of \$180,000 has been approved of for improvement of Boulevard and other streets.

Pecos, Tex.—Commercial Club, F. W. Johnson president, has endorsed plan calling for \$200,000 road bond issue in Reeves County; election for sewerage and soft water supply systems were also endorsed.

Alexandria, Va.—City Council has passed ordinance providing for paving with vitrified brick square on Fairfax st., between Prince and Duke sts.

Amherst, Va.—Bids for building road in Eton district have been rejected. Road toward Sandidges will be built by Sardis route.

Petersburg, Va.—Dinwiddie County Road Board is contemplating proposition of improving road between Matoaca bridge and Washington st. road.

Spotsylvania, Va.—In Berkeley district of county \$30,000 bond issue will shortly be voted for good roads.

Cheney, Wash.—Resolution is being prepared for improvement of 2d st., from D st. to A st., by putting in new concrete sidewalks.

Omak, Wash.—Voters have authorized \$4,000 bond issue for street improvements.

Spokane, Wash.—Park Board is planning new down-river parkway to connect north-west boulevard to proposed down-river park. City Commissioners have been asked to construct parkway about 1,500 ft. long, which they say can be done with little expense.

Barboursville, W. Va.—Bids for \$13,000 road bonds will be received Oct. 23.

Moundsville, W. Va.—City has authorized paving of Waynesburg rd. from city limits to bottom of hill.

CONTRACTS AWARDED

Los Angeles, Cal.—By Board of Public Works, for paving with macadam Cahnenga ave., to Geo. H. Oswald, at \$34,608; with asphalt, Pasadena ave., to Fairchild Gilmore Wilton Co., Pacific Electric Bldg., for \$8,323; improving Wallace ave., to Walter Overell, \$6,184, and McKinley ave., to H. H. Curtis, at \$7,326.

Sacramento, Cal.—By City, for improvement of streets in Maple Park, to Clark & Hennessy Construction Co.

San Francisco, Cal.—By Board of Public Works, for paving, to City Street Improvement Company as follows: Lincoln way, from 20th to 27th ave., \$16,029.65; Kearny st., from California to Sacramento, \$3,728.04; California, from Sansome to Battery, \$3,707.01.

Bridgeport, Conn.—For paving portion of Congress st., with granite blocks as follows: For laying blocks, to A. J. Langenfeldt, at \$1.49 per sq. yd., and furnishing Webb blocks, to Hildreth Granite Block Co., of Boston, Mass., at \$1.64 per sq. yd.

Colorado Springs, Colo.—For laying 300,000 sq. yds. of asphalt pavement, to J. F. Hill, Spokane, Wash., at \$500,000.

Denver, Colo.—For paving West 23d st. with asphalt macadam and for grading in District No. 12, to Denver & Pueblo Construction Co., Denver, at \$21,771 and \$29,334, respectively.

Dover, Del.—By General T. Coleman du Pont, for Coleman du Pont road, as follows: George Snyder, Philadelphia: 4.10 miles; Phillips & Neal, Harlock, Md., 3 miles. Chief Engineer F. M. Williams and Consulting Engineers Ernest Storm, of France, and Thomas Aiken, of Scotland, approved these awards.

Indianapolis, Ind.—By Board of Public Works, for resurfacing with asphalt Capitol ave., to Hossier Construction Co., American Central Life Bldg., at \$2.44 per lin. ft.

Council Bluffs, Ia.—By City Council, for laying about 10,000 sq. ft. of sidewalk, W. J. P. Wickham & Co., at 7.7c. per sq. ft. for concrete work and 40c. for grading.

Dubuque, Ia.—For brick paving 1st st., to the O'Farrell Contracting Co.; curbing, 60c. per lin. ft.; old brick paving, \$1.13 per sq. yd.; new brick paving, \$1.98 per sq. yd.

Sioux City, Ia.—To Flinn & Hanlon, for paving with concrete portions of 7th, 8th, 9th, 10th, 11th, 15th, 16th, 17th, 18th, 23d, 24th and Jones sts., at \$1.20 per sq. yd.

Abilene, Kan.—By City, for paving of alleys in business district of town, to Snyder & Peterson.

Somerville, Ky.—For paving as follows: American Standard Asphalt Co., one street; Barber Asphalt Co., four streets.

Jackson, Mich.—For paving W. Capitol st. with Trinidad Lake asphalt, to Southern Asphalt Construction Co., of Birmingham, Ala., at \$1.78 per sq. yd.; total, \$40,000.

St. Paul, Minn.—By Board of Public Works, for grading Hamline ave., from Portland ave. to University, to Keough Bros., at \$3,162.

St. Joseph, Mo.—To Young Bros. Construction Co., for paving Messanie st. with sandstone blocks, at \$3.19 per sq. yd.

St. Louis, Mo.—For alley improvements calling for expenditure of near \$64,500, by Board of Public Works, as follows: Alley, from Virginia to Alabama, between Wilmington rd. and Dover, to Ruecking Construction Co., \$1,700; Warner to Vandeventer, between Easton and Lucky, to Henry F. Herman, \$3,041; Gustine to Russell, between Juanita and Hartford, to G. Eyermann & Bro., \$2,264; Hawk to Sarah, between Gratiot and Clayton, to Harry F. Heman, \$1,232; Meramec to Gasconade, between Nebraska and Pennsylvania, to Ruecking Construction Co., \$3,011; Vandeventer to Warner, between Lexington and Palm, to Frank A. Stiers, \$2,207; Newhouse to Glasgow, between 25th and Vest, to Daniel Murphy, \$1,465; Evans to Easton, between Prairie and Vandeventer, to Harry F. Heman, \$2,871; Bartmer to Suburban, between Hodiamont and western city limits, to Frank A. Stiers, \$1,748; 25th to Jefferson, between Class and Mullanphy, to Harry F. Heman, \$1,467; 25th to Parnell, between Warren and Montgomery, to Timothy E. Cavanaugh, \$2,088; 25th to Parnell, between Montgomery and St. Louis, to Timothy E. Cavanaugh, \$2,029; Parnell to Jefferson, between Dodder and Sullivan, to Timothy E. Cavanaugh, \$2,206; 25th to Parnell, between Sullivan and Herbert, to Daniel Murphy, \$2,067; Parnell to Lismore, between Sullivan and Herbert, to Daniel Murphy, \$1,999; Lismore to Jefferson, between Sullivan and Herbert, to Daniel Murphy, \$1,136; 14th to Blair, between Penrose and Farragut, to Ruecking Construction Co., \$2,756; 18th to Salena, between Sidney and Victor, to Ruecking Construction Co., \$2,559; 23d to 25th, between Dodder and Sullivan, to Daniel Murphy, \$1,440; Chouteau to Papin, between 6th and 7th, to Timothy E. Cavanaugh, \$372; 17th to 18th, between Lucas and Morgan, to Skrainka Construction Co., \$1,202; Arkansas to Grand, between Sidney and Victor, to Ruecking Construction Co., \$1,646; 18th to Mississippi, between Rutger and Hickory, to Ruecking Construction Co., \$2,228; Nebraska to Pennsylvania, between Lafayette and Henrietta, to Ruecking Construction Co., \$1,116; 22d to 23d, between Sullivan and Herbert, to Daniel Murphy, \$1,920; Josephine to Ewing, between Chouteau and Papin, to Skrainka Construction Co., \$1,936; 25th to Parnell, between St. Louis and University, to Daniel Murphy, \$1,877; 25th to Jefferson, between Mullanphy and Howard, to Daniel Murphy, \$1,554; Spring to Vandeventer, between Laclede and West Pine, to Skrainka Construction Co., \$4,865; O'Fallon to Cass, between Sarsfield and O'Fallon, to Daniel Murphy, \$3,622.

Missoula, Mont.—For paving in S. 3d st. Improvement District, to Strange & McGuire, of Salt Lake City, Utah, for \$38,882.

Jersey City, N. J.—For improvement of Fairmount ave., from Monticello ave. to Storms ave., to M. J. Curley.

Trenton, N. J.—For repaving Hamilton ave. to Richard B. Newton Co.

Cohoes, N. Y.—For paving Rensselaer st. with block, to Thos. F. Gratian, of Cohoes, for \$9,151.

Rochester, N. Y.—By Bd. of Contract, for paving Field st., to F. V. Brotsch, for \$4,969.

Troy, N. Y.—For widening and improving Oakwood ave. at Winne Gully, to E. J. Doyle & Co., of Albany, at \$7,126.

Burlington, N. C.—By City, for street improvements, as follows: 20,000 sq. yds. of bituminous macadam, 15,000 sq. yds. of concrete sidewalks, 5,000 lin. ft. of combined curb and gutter, and 25,000 cu. yds. of grading, to Abbee Bros. & Hart, of Hickory, N. C.

Fargo, N. D.—For paving with cement alleys in business part of city, to James Kennedy as follows: For filling, 75c.; for excavating, 60c.; for sub-foundation, 15c.; concrete curbing, 40c.; for concrete paving, \$1.20.

Bryan, Ohio.—By Commissioners of Williams County, for grading and macadamizing 1.52 miles of road in Pulaski Township, as follows: To Fishbaugh, Karch & Appenzeller, Greenville, water-bound slag or stone, \$11,841; other bids: J. A. Westrick, Holgate, water-bound macadam, \$12,500; Kelly Construction Co., Bryan, water-bound slag, \$12,075; water-bound macadam, \$12,535; slag with byelite binder, \$13,606; slag with carbo-via binder, \$13,506; stone with carbo-via binder, \$13,966.

Bryan, O.—By city, for construction of model road a mile and a half in length on Main st. south from corporation, to Kelly Construction Co., at \$13,506.61.

Novata, Okla.—To Southwestern Construction Co., Muskogee, for asphalt paving in Novata, at \$53,935.

Eugene, Ore.—By City, for grading and graveling of alleys in block bounded by 8th, 9th, Olive and Charnelton sts., to Eugene Sand & Gravel Co., at 49½c. per cu. yd. for grading and 53c. per lin. ft. for macadam.

Canonsburg, Pa.—To Maynard & Co., of Pittsburgh, for paving S. Central ave., about 6,500 sq. yds. paving, 2,100 cu. yds. excavation and 900 ft. new curb.

Erie, Pa.—By City, for paving of Ash st., between 6th and 8th sts., to Mayer Brothers' Construction Co., at \$1.55 per yd.

Harrisburg, Pa.—By State Highway Department, for constructing 5,048 ft. of road in Saladasburg, Lycoming County, to Junata Paving Co., of Philadelphia, for \$13,225.

Galveston, Tex.—For paving portion of causeway, to J. C. Kelso, of Galveston. The work calls for 12,000 cu. yds. mud shell, at \$1.25 per cu. yd.

Hamlin, Tex.—To Ray McDonald, Marlin, Tex., for laying 20,000 sq. yds. of pavement at cost of about \$40,000.

Portsmouth, Va.—By Local Board of 7th Ward, to R. P. Denby, of Norfolk, for grading 10 streets for about \$9,174, and for concrete curbs and gutters and concrete walks, to Louis Lawson, of Norfolk, for \$30,116.

Colfax, Wash.—To Wilson-Bailey Construction Co., of North Yakima, for paving Colfax and Palouse City Roads, for \$8,931.

Garfield, Wash.—By County Commissioners, for building 3 miles and 45 rods of macadam road from Garfield eastward to Spokane firm, for sum of \$22,640.

Spokane, Wash.—By City Commissioners, to Naylor & Norlin, for grading, curbing, parking and sidewalk Altamont st., 9th ave. to Bryant ave., and of 9th ave., Jacques st. to Altamont st., at \$10,779.

Grafton, W. Va.—By City Council, for paving with brick W. Main st., to W. P. Withers, at \$1.36 per sq. yd.

BIDS RECEIVED

Los Angeles, Cal.—For improving Wilshire Boule., a distance of 35 blocks: (1) per sq. ft. Bitulithic paving, (2) per sq. ft. for sidewalks, (3) per lin. ft. for cement curb, (4) per sq. ft. for vitrified block gutter, (5) per sq. ft. for cement gutter, (6) for sewer between Commonwealth Ave. to Coronado St., (7) for culvert at Virgil Ave., (8) for culvert at Shatto St., (9) for culvert at Mariposa St., (10) for sewer between Wilton Pl. and Kingsley Drive; Barber Asphalt Paving Co. of Los Angeles, (1) 19½ cts., (2) 14½ cts., (3) 35 cts., (4) 29 4/5 cts., (5) 16 cts., (6) \$2,555, (7) \$309, (8) \$466, (9) \$2,434, (10) \$81,266; Warren Construction Co., (1) 18.7 cts., (2) 15 cts., (3) 38 cts., (4) 29½ cts., (5) 19.7 cts., (6) \$2,600, (7) \$160, (8) \$390, (9) \$2,500, (10) \$83,200.

Seattle, Wash.—For paving alley, block 37, Capitol Hill Add., as follows: Sparger Concrete Co., \$4,162.65; Independent Asphalt Pav. Co., \$4,292.60; De Flong & Heltborg, \$3,990.15; Sanfield & Ritchie, \$3,973.80. For grading, etc., California ave., J. A. McEachern Co., \$2,395; Hansen & Co., \$2,807; Sanfield & Ritchie, \$3,209. For grading, etc., 1st ave. S., Gross & Wolff Eng. & Con. Co., \$57,831 and \$56,957; West Coast Const. Co., \$51,231 and \$50,595; Sanfield & Ritchie, \$53,042 and \$52,262; W. F. Manney & Co., \$60,389 and \$60,025; Sloan Bros., \$47,620.20 and \$47,030.20; W. H. Marks, \$54,303 and \$58,892; Sundberg & Lundstrom, \$58,514 and \$57,746. For grading, etc., Erie ave., Sloan Bros., \$3,356.70; De Flong & Heltborg, \$3,761.80; and for grading, etc., 25th ave. S. W., Hansen & Co., \$3,720.

SEWERAGE

Imperial, Cal.—City is considering construction of sewer system to cost \$27,000.

Vacaville, Cal.—Bids will be readvertised for building of septic tank, only one bid being received, which was far in excess of estimated cost.

Council Bluffs, Ia.—Resolution is being considered, calling for sewer lines on Hill, East and Canning sts.

Louisville, Ky.—Board of Public Works also has ordered sewers constructed in Walnut st., from 26th to 28th sts., and in Duncan st., from 23d to 25th sts. Cost about \$4,000.

Attleboro, Mass.—Sewer bonds to amount of \$100,000 have been sold to Estabrook & Co.

Boston, Mass.—City will borrow \$2,885,000 for public improvements; \$395,000 will be used for drainage purposes, and \$250,000 for general sewerage.

New Bedford, Mass.—Petition has been received asking for bettering of sewerage conditions.

Springfield, Mass.—Chicopee Board of Aldermen has voted to bond city for \$8,000 to build Fairview and Plainfield st. sewers.

Schuyler, Neb.—Bids will shortly be required for sewer system estimated to cost \$60,000.

Dover, N. J.—Application is to be made by Dover to Circuit Court for appointment of sewer commission.

Elizabeth, N. J.—Ordinance has been passed providing for construction of sewer in High st., from 4th ave. to point 360 ft. westerly.

Harrison, N. J.—Resolution has been adopted by Town Council of Harrison instructing Mayor and Town Clerk to sign new contract for trunk sewer with Passaic Valley Sewerage Commission.

Newark, N. J.—Ordinance has been passed providing for laying of sewer taps from sewer to curb line on Washington ave. from Springfield ave. to Madison ave.

Nutley, N. J.—Plans have been prepared for sewerage system for entire town to join Passaic Valley trunk sewer project, which is to run from Paterson to New York Bay, at cost of \$12,500,000; estimated cost of local sewerage system is \$250,000.

Perth Amboy, N. J.—Ordinance has been passed for laying of 18-in. pipe sewer in West Side ave.

Glen Cove, L. I.—A sewerage system will be built. Issue of \$150,000 bonds has been authorized.

Fredonia, N. Y.—Sewer committee of Village Board of Trustees will confer with Dunkirk Common Council with regard to proposition to join sewers of Dunkirk and Fredonia in Central ave., so that sewage from lower Central ave. district will be conveyed through Dunkirk sewer into lake.

Long Island City, N. Y.—Sewers will be constructed in various streets.

Rochester, N. Y.—Streets and Sewers Committee of Common Council will hold public hearing on Frank and Lorimer sts. sewer. Plans were submitted some time ago, but have been revised.

Utica, N. Y.—Following improvements have been authorized: Laying of sewer in Steuben st. from end of existing sewer to about 20 ft. north of parkway, at \$790.68; sewer in West st. from end of present sewer to within about 20 ft. of parkway, at \$516.53; sewer in Tilden ave., at \$2,085.40.

Raleigh, N. C.—Sewer system will be extended.

Xenia, Ohio.—City is considering construction of sewage disposal plant, to cost about \$40,000.

Muskogee, Okla.—Sewer District No. 74 has been created by ordinance.

Oklahoma City, Okla.—City Commissioners are considering question of ordering election to determine if taxpayers are willing to vote bonds for construction of city's part of drainage district No. 6.

Danville, Pa.—Council has ordered sale of \$11,200 in bonds to pay for recent sewer construction and street paving.

Eddystone, Pa.—Final action has been taken in favor of sewerage the principal streets.

Woonsocket, R. I.—Common Council has authorized appropriation of \$4,480 for sewer work.

CONTRACTS AWARDED

Oakland, Cal.—By City, for construction of sewer in Webster st., to Ransome-Crummey Co., as follows: Furnishing and laying 24-in. pipe, at \$3.35 per lin. ft.; furnishing and laying 18-in. pipe, at \$2.45 per lin. ft.; furnishing and laying 16-in. pipe, at \$1.94 per lin. ft.; furnishing and laying 14-in. pipe, at \$1.65 per lin. ft.; furnishing and laying 6x14-in. "Y" branches, at \$1.00 each extra; furnishing and laying 6x24-in. "Y" branches, at \$2.50 each extra; furnishing and laying 6x18-in. "Y" branches, at \$1.50 each extra; furnishing and laying 6x16-in. "Y" branches, at \$1.25 each extra; constructing brick manholes with covers, complete, \$98.00 each.

Tracy, Cal.—For constructing sewer system, to C. D. Vincent, of San Francisco, for \$21,223.

Venice, Cal.—By City Council, for constructing sewer on 6th ave., from Brooks ave. to Rose st., to Braun, Bryant & Austin, at \$5,300.

Waterbury, Conn.—By Board of Public Works, for laying sewers on Fuller, Rose, Hill, Waterville, North Main, Lounsbury sts. and Chapman ave., to Angelo Contr. Co., of Hartford.

Summerville, Ga.—For installation of new sewerage, to Guild & Co., of Chattanooga, Tenn., at \$11,000.

Louisville, Ky.—To P. Bannon Sewer Pipe Co., for 27 to 36-in. sewer pipe and fittings.

Baltimore, Md.—By Board of Awards, for construction of high-level interceptor in vicinity of Read and St. Paul sts., to W. H. & C. F. Thompson Co., for \$95,733.

Brookline, Mass.—By Selectmen, sewer, Michael J. O'Hearn, \$2,549; drain work, Timothy Driscoll, \$337.

Walden, Mass.—By City, for building Mt. Vernon Park sewer, to John J. Gaffney.

Muskegon, Mich.—For sewer construction to E. W. Kruger, Muskegon, at \$12,368.

Hutchinson, Minn.—To Fraser & Danforth, of Rochester, for constructing exten-

sion of sewer system to seminary for about \$5,480.

Virginia, Minn.—For constructing sanitary sewer, to C. C. Butler, at \$9,270.

Nelson, Neb.—To Nelson Sewer Co., for sewer system for Nelson from plans of Bruce & Standevin.

Bradley Beach, N. J.—For extending sewer system, to Monmouth Contracting Co., Red Bank, N. J., at \$11,664.

Newburgh, N. Y.—By City, to complete sewer in Lake st., to Michael R. Spino, of Fishkill Landing, at \$10,440. Prices as follows: For each lin. ft. (635) of brick sewer 38 in. in diameter, shown by Fig. 1 on plan, including all Y's or branches, and all work necessary to complete original contract, \$14; total, \$8,890. For each lin. ft. (50) of brick sewer, 38 inches in diameter, shown by Fig. 2 on plan, including all Y's or branches and all work necessary to complete original contract, \$14.50; total, \$725. For each cu. yd. of rock excavation (about 50), \$4.50; total, \$225. For each sewer manhole (3), built complete, \$135; total, \$405. For each cu. yd. (about 10) of Portland cement concrete, \$8; total, \$80. For each 1,000 ft. of B. M. timber sheathing left in trench, \$55. For each 1,000 ft. of B. M. timber grillage in foundation, \$60.

Fargo, N. D.—To Charles H. Porritt, for 12-in. sewer on 5th st. for 250 ft. on 6th ave. south, at \$150; \$60 for manholes, and \$59 for catchbasins.

Dayton, O.—By City, for construction of sewers in District No. 4 to Boyd & Cook, at \$21,456.40.

Dallas, Tex.—By City Commission, to Dallas Home Improvement Co., for laying storm sewer on Wabash ave. and Worth st., between Crutcher and Hill ave., 6-in. sanitary sewer in alley between Corinth and Ferris st., from Bourbon to Orleans st., and 6-in. sanitary sewer in Cottage lane, from Crockett to Leonard st.

Richmond, Va.—By City, for construction of Baker's Quarter Branch sewer, to Driscoll & Co., at \$19,000.

Spokane, Wash.—To J. L. Wood, for sewer on 16th ave., Madella to Martin st., at \$4,030. John Getman was awarded contract for 16th ave. sewer, from Perry to Madella st., at \$1,820. Estimate on former was \$5,350 and on latter \$2,200.

Vancouver, Wash.—To Johnson & Anderson, of Portland, Ore., for constructing main sewer, at \$35,500.

BIDS RECEIVED

Seattle, Wash.—For construction of sewers in Interlake ave., as follows: Becker & Walker, \$56,542.50; Frank S. Misho, \$48,637.36; Krogh & Jensen, \$49,930.20; Ferguson-Coit Co., \$47,814.12; Thos. I. Jeteron, \$51,228.20; Young & Ulrich, \$51,340.66; also in Greenwood ave., as follows: J. Ruthe, \$6,761.20; Krogh & Jensen, \$5,746.30; V. Rumaglia, \$6,113.40; Young & Ulrich, \$6,409; Nelson & Carlson, \$6,594.10; Becker & Walker, \$5,553.10.

Spokane, Wash.—For sewer in 16th ave., Madella to Martin st., estimate \$5,350; J. C. Broad, \$4,165; Lang & Smith, \$4,160; J. L. Woods, \$4,030; R. B. DeCamp, \$4,368, and sewer in 16th ave., Perry to Madella st., estimate \$2,200; J. C. Broad, \$2,565; Lang & Smith, \$2,860; John Getman, \$1,820; J. L. Woods, \$2,198; R. B. DeCamp, \$2,374.

WATER SUPPLY

Burlingame, Cal.—Installation of municipal water system is contemplated and appropriation of \$1,000 has been made to prepare plans.

Venice, Cal.—Question of municipal water plant is being considered by city trustees.

Washington, D. C.—Commissioners have ordered new water mains to be laid as follows: 465 ft. of 8-in. water main on Brentwood rd., 150 ft. of 4-in. water main on Milwaukee pl.; 420 ft. of 8-in. water main on 13th st., between Good Hope rd. and S st.; 545 ft. of 8-in. water main on 14th st. southeast; 210 ft. of 8-in. water main on

16th st., and 1,375 ft. of 8-in. water main on S st., between 13th and 16th sts. south-east.

Seaton, Ill.—Election will be held for voting on bond issue of \$9,000 for installation of waterworks.

Rushville, Ill.—Election will shortly be held for voting on issuance of \$30,000 for extension of waterworks.

Michigan City, Ind.—Council is considering ordinance appropriating \$3,000 for use in extension of water mains in city.

Terre Haute, Ind.—City Council is contemplating purchase of water works plant.

Bayard, Ia.—Town will vote on bond issue for installing waterworks.

Brockton, Iowa.—City is considering installation of water-works plant to cost about \$16,000.

Grand Junction, Iowa.—The Des Moines Bridge & Iron Works will prepare plans for construction of 100,000-gal. steel tank and tower, to cost \$5,000 or \$6,000.

Gravity, Iowa.—Town is contemplating installation of water-works system for fire protection.

Indianola, Iowa.—City Council is making plans for sinking several wells and constructing 750,000-gal. reservoir.

Jefferson, Ia.—Des Moines Bridge & Iron Works, of Des Moines, is preparing plans for new water tower and tank.

Mt. Vernon, Ia.—City will construct reinforced concrete storage reservoir.—W. W. Schirer, Clerk; Iowa Engrg. Co., Clinton, Ia., Engrs.

New London, Ia.—Plans have been prepared for Village Board for construction of proposed new water works system.

Oskaloosa, Ia.—County Board has rejected bids for construction of water system at County Home, and new bids will be asked.

Pisgah, Ia.—Election will be held to vote on issuing bonds for water works; probable cost, \$6,000.

Prairieburg, Ia.—Election will be held for \$5,000 bond issue for water works.

Abilene, Kan.—Plans are being constructed for a 50-ft. standpipe to be erected in north part of city on concrete foundation.

Mound City, Kan.—Plans are being proposed to expend about \$20,000 in improvements.

Corbin, Ky.—At election in November Town will vote on installation of water-works.

Boston, Mass.—City will borrow \$2,885,000 for public improvements; \$150,000 will be used for high-pressure water service.

Lowell, Mass.—Water Board has voted to call for bids for contract of building structure for Holly pump on boulevard, bids to be in by October 18. Board estimated cost of building at from \$14,000 to \$15,000.

New Bedford, Mass.—Various petitions for the extension of water mains have been granted.

Oakwood, Mich.—Council has decided to extend water mains on Fort st., about 1,800 ft., and 570 ft. on Frederick st.; cost will be about \$2,000.

Chisholm, Minn.—At meeting of the water, light, power and building commission recently resolution was passed authorizing laying 1,800 ft. of water mains in various parts of city.

Virginia, Minn.—City Council has passed resolution for calling election for voting on \$600,000 bond issue for construction of water and light plant.

Totawa, N. J.—J. B. Rider, consulting engineer, presented four plans for water supply to public meeting.

Wenonah, N. J.—Resolution has been adopted to bond borough in \$35,000 for purchase of water plant.

Jamestown, N. Y.—New water supply system is being considered.

Le Roy, N. Y.—Special election to vote on proposition to authorize new issue of \$44,000 worth of water bonds will be held on Saturday, October 21. Bonds are to run for 27 years, 5 years without payments.

Raleigh, N. C.—Engineer has been employed to report on water supply.

Dayton, O.—For Sanitary Sewer Dist. No. 3, in Light, Grant and Chapel Sts.

Items.	Quantity.	Shafar & Dill. Price.	Boyd & Cook. Price.	Unknown. Price.	Hecker & Kirchner. Price.
8" Pipe Sewer, per lin. ft.	1,500	\$.19	\$.20	\$.18	\$.19
0' to 6' deep, per lin. ft. cut.	1,200	.25	.30	.30	.35
6' to 8' deep, per lin. ft. cut.	300	.43	.30	.40	.45
Manholes, complete, each.	3	25.00	20.00	28.00	25.00
Lampholes, complete, each.	2	4.00	5.00	3.00	3.00
Flushtanks, complete, each.	2	35.00	35.00	35.00	30.00
Lead Pipe with Tch. per lin. ft.	20	.50	.45	.35	.50
Corporation Cocks and Specials.	2	8.50	7.50	5.00	10.00
Brick repaving, per sq. yd.	10	2.00	1.50	2.00	1.50
TOTALS.		\$914.00	\$929.00	\$947.00	\$1,026.00

Dayton, O.—Bond issue of \$600,000 is being considered for providing adequate water supply.

East Liverpool, O.—City Council has passed ordinance authorizing issuance of \$150,000 of bonds for new waterworks plant.

Muskogee, Okla.—F. P. McCormick submitted lowest bid for water works intake; for brick, \$95,473; for concrete, \$89,870. Other bidders were: L. De Waard, Rooney & Culp, Herman Construction Co. and Southwestern Construction Co.

Pauls Valley, Okla.—The Corporation Commission has issued order requiring Washita Electric Power Co., of Pauls Valley, to put in auxiliary plant to be run by steam, in order that citizens of Pauls Valley may receive adequate supply of water at all times.

Marshfield, Ore.—City is planning installation of waterworks system, together with North Bend.

Portland, Ore.—Bonds amounting to \$150,000, to provide reinforcing water main system for fire protection in business districts of East and West Sides, and which were authorized by voters three years ago, have been ordered sold by the Ways and Means Committee of Council.

Bethlehem, Pa.—Borough Council has passed ordinance to submit to vote question of increasing bonded indebtedness \$175,000 for erection of water plant.

Columbia, S. C.—City will enlarge its water works power plant. New 5,000,000-gal. pump with water wheels, etc., is contemplated.—W. F. Stieglitz, Council Supt.

Colome, S. D.—Voters have authorized issuance of \$8,500 bonds for construction of municipal water system.

Bartlett, Tex.—City waterworks is preparing to put its consumers on meters and have received 174, which will be put in at once.

Cleburne, Tex.—Attorney General has informed Mayor Burch that city may issue water works bonds.

Pasco, Wash.—Citizens will vote on issuance of \$50,000 worth of bonds for purchase of city waterworks.

Fond du Lac, Wis.—Voters have decided to purchase property and plant of Fond du Lac Water Co.

CONTRACTS AWARDED

Alturas, Cal.—To A. E. Pearson, for installation of water works, for about \$9,486.

Porterville, Cal.—By City, for waterworks as follows: To Western Engineering & Water Supply Company, of Oakland, for laying pipe, at \$12,000; to United States Cast Iron Pipe & Foundry, for pipe and fittings; to F. B. Roberts Company, of Oakland, for standpipe.

Fowler, Colo.—To McDowell Construction Co., of Lamar, Okla., for construction of irrigation system to include dam across Apishapa River, and construction of storage reservoir for flow water which will have capacity of 20,000 acre ft.

Oregon, Ill.—To Bellis & Gale, for construction of water mains at Franklin Grove.

Belle Plaine, Ia.—For waterworks extensions, to Malory & Company, of Ke-wanee, Ill., at \$17,173.50.

Grosse Pointe Shores, Mich.—By Village, for water mains, to Corneliuss Cronin, at \$16,400.

Moorhead, Minn.—For installing 3,767 ft. 6-in. water mains, to Louis Schruth, of Fargo, N. D., for \$4,209.

Tylertown, Miss.—For drilling deep well for water works plant, to Nalty Bros., of Brookhaven.

Huntley, Mont.—By Secretary of the Interior, for earth work and structures on extension of Main and High Line Canal, Huntley Irrigation Project, Mont.: To J. E. Hilton, of Manhattan, Mont., for earth work involving the excavation of approximately 185,000 cu. yds., at \$29,085; to J. S. Hilend, of Cowley, Wyo., for structures, except syphons, at \$32,549.

Beatrice, Neb.—For constructing reservoir, to G. M. Tice, of Council Bluffs, Ia., by City, at \$6,180.

Malmö, Neb.—To Elkhorn Construction Company, for putting in city water system, at \$7,200.

Steinauer, Neb.—For constructing water works, to Cook Const. Co., of Des Moines, Ia., for \$6,598.

Upland, Neb.—For construction of water works, from plans of Alamo Engine & Supply Co., of Omaha, as follows: Engine, tank and pump, to Fairbanks, Morse Co., Omaha; distributing system, to L. P. Strayer, of Pallsade, Neb.; total cost, \$10,225.

Rochester, N. Y.—By city, for construction of 24-in. water main on Leighton ave., to H. C. Schroeder, at \$3,557.50.

Fargo, N. D.—To Charles H. Porritt, for water main on 2d st. north, between 5th and 6th aves., at \$1.30 for main and \$72 for fire hydrants.

Springfield, O.—To Laidlaw, Dunn & Company, for new 4,000,000-gal. pump, at \$10,640.

Bokchito, Okla.—By City, to George Erickson, of Durant, Okla., for constructing water works plant, including pump-house and steel tower, at \$11,380.

Muskogee, Okla.—By City, for construction of waterworks, intakes and water towers, to F. P. McCormick, at \$89,780.50.

Huntingdon, Pa.—For construction of dam, to Hall & Grelock, of Huntingdon. Work will not begin until spring.

Knoxville, Tenn.—By Water Works Commission, for furnishing two new boilers at pumping station, to C. M. McClung & Co., of Knoxville, at \$5,700.

Dallas, Tex.—By Board of City Commissioners, to Harris Air Pump Co., of Indianapolis, for furnishing pumps for two wells at Union Hospital, one in Hughes Pasture, one at Turtle Creek reservoir, five in West Dallas, at \$1,591.

Milwaukee, Wis.—To Gray Water Supply Co., for making test borings for proposed new water intake, for about \$6,000. New intake complete will cost \$850,000.

New Lisbon, Wis.—To Central Construction Co., of Oshkosh, Wis., for construction of electric light and water works plant by city. The contract includes complete light and water plant, 75,000-gallon steel tank, 120 ft. from bottom.

Edmonds, B. C.—W. A. Kennedy, 744 Hastings st., West, Vancouver, B. C., has withdrawn from contract for laying steel pipe in Edmonds, and contract has been awarded to next lowest bidder, the Municipal Construction Co., 319 Pender st., West, at \$109,000.

BIDS RECEIVED

Canton, Ill.—For pump and compressor at waterworks—Compressor: Platt Iron Works Chicago, \$3,119; Laidlaw-Gordon Company, Cincinnati, \$3,745; Blaisdell Machinery Works, Pennsylvania, \$3,300; Ingersoll-Rand Company, Chicago, \$2,599, \$3,177, \$3,533; Hamilton-Corliss Company, \$5,590; Heisler Machine Company, of St. Mary's, O., \$3,850. Pump—Allis-Chalmers Company, \$7,850; Heisler Machine Company, \$6,890; Laidlaw-Gordon Company, \$8,340 (for both compressor and pump); Platt Iron Works Company, \$4,555; Canton Hughes, of Canton, O., \$6,500 and \$5,750.

Tarrytown, N. Y.—For furnishing pipe, as follows: U. S. Cast Iron Pipe & Foundry Co., 71 Broadway, New York, \$21.45 per ton, delivered at Tarrytown, \$21.70 at Tarrytown Heights; \$20.30 delivered at dock; and \$48 for fittings per ton; delivery before Nov. 30. Standard Cast Iron Pipe & Foundry Co. \$21.40 at Tarrytown; \$21.70 at Tarrytown Heights; \$47.50 per ton for fittings; Oct. 25. Donaldson Iron Co., \$22.04 at Tarrytown; \$22.34 at Tarrytown Heights; \$50 for fittings per ton; Nov. 15. R. D. Wood & Co., \$22.15 at Tarrytown; \$22.45 at Tarrytown Heights; \$21.25 at dock; \$21.10 at boat in channel; \$48 per ton for fittings, boat; \$50, rail; five to seven weeks after receipt. Warren Foundry & Machine Co., \$23.50 at Tarrytown; \$23.50 at Tarrytown Heights; \$48 before Oct. 4 for fittings. John Fox & Co., \$22.30 at Tarrytown; \$22.30 at Tarrytown Heights; \$49.50 for fittings.

Bids for laying pipe as follows: (a) laying 10-in. pipe on Sunnyside and Union Aves., per ft.; (b) 8-in. pipe on Union Ave., per ft.; (c) 10-in. on Highland and Prospect Aves., per ft.; (d) 6-in. pipe and removing 6-in. pipe on Prospect Ave., per ft.; (e) 10-in. and removing 4-in. pipe on North Broadway, Wildey, South Orchard and Franklin Sts., per ft.; (f) rock excavation, per cu. yd.; (g) timber, planing, etc., left in trench, as follows: Antonio Lambo, (a) 52 cts., (b) 50 cts., (c) 52 cts., (d) 49 cts., (e) 54 cts., (f) \$5, (g) \$20; Duell & Hallows, (a) 79 cts., (b) 74 cts., (c) 79 cts., (d) 70 cts., (e) 84 cts., (f) \$4, (g) \$60; Tony Richards, (a) 61 cts., (b) 52 cts., (c) 52 cts., (d) 50 cts., (e) \$1.04, (f) \$3, (g) \$52; Hudson River Cont. Co., (a) \$1.10, (b) \$1.10, (c) \$1.10, (d) \$1.10, (e) \$1.10, (f) \$2.50, (g) \$20; Wm. J. Watson Cont. Co., (a) 95 cts., (b) 95 cts., (c) \$1.15, (d) 90 cts., (e) 90 cts., (f) \$3, (g) \$45; Edw. Jackman, (a) 47 cts., (b) 47 cts., (c) 47 cts., (d) 47 cts., (e) 47 cts., (f) \$2.50, (g) \$40; Daniel Donovan, (a) 90 cts., (b) 80 cts., (c) \$1.05, (d) 25 cts., (e) 30 cts., (f) \$4, (g) \$35.

LIGHTING AND POWER

Decatur, Ala.—Issue of \$50,000 bonds for municipal lighting plant is under discussion.

Dorris, Cal.—Electric lighting system will be established immediately.

Roseville, Cal.—City Engineer U. S. Marshall has submitted to Trustees a report on municipal lighting plant for Roseville, to be acquired with \$10,000 in bonds voted for that purpose.

Stockton, Cal.—Election will be held Nov. 7 for voting on municipal lighting system.

Washington, D. C.—Commissioners have ordered installation of 40-candle-power incandescent electric lamps at various points of city.

Brooksville, Fla.—Town Council has called election to see if people of Brooksville desire to grant franchise to Mr. Fuller, of Umatilla, to put in electric light and power plant and water plant for public service.

Americus, Ga.—Company has been formed by Frank Lanier and Frank Sheffield to establish gas and electric light plant.

Silvis, Ill.—Petition has been received asking for lighting with gas portion of village extending along 8th St. to 4th Ave.

Elliott, Ia.—Installation of electric lighting has been authorized.

Eugene, Ia.—City Council has authorized issuance and sale of \$5,000 of \$25,000 electric light bonds.

Caney, Kan.—Voters have authorized issuance of \$30,000 bonds to build municipal gas pipe line from newest gas field to Cavey.

Waterville, Kan.—Construction of water works and electric light plant is under consideration.

Homer, La.—City Council has purchased Homer Electric Light & Power Co. from Ed. Sawers, at \$5,750.

Boston, Mass.—City will borrow \$2,885,000 for public improvements; \$300,000 of which will be for street lighting equipment.

Kalamazoo, Mich.—Municipal improvements to cost nearly \$250,000 have been planned, including modern street lighting system.

Sarnia, Mich.—Town and Sarnia Gas & Electric Light Co. have submitted question of purchase of company's plant for arbitration. Town intends to own its own gas and lighting plant.

Virginia, Minn.—City Council has passed resolution for calling election for voting on \$600,000 bond issue for construction of light and water plant.

Manchester, N. H.—Ordinance is being considered providing for location of 36 poles and 550-candle-power arc gas lights in Hanover st., between Elm and Chestnut sts.

Millville, N. J.—Council has passed resolution to submit to citizens question of issuing bonds for purpose of erecting and operating a municipal electric light and power plant by referendum vote at November election.

Red Bank, N. J.—Plans have been prepared for municipal electric light plant; estimated cost, \$35,000.

Binghamton, N. Y.—Contract between city of Binghamton and Binghamton Light, Heat & Power Co. whereby city gets 3-year lighting contract under new system that provides for equal distribution of lamps throughout city has been signed.

Brooklyn, N. Y.—Plan to establish new lighting district in Midwood Park, Fiske Terrace and vicinity has been endorsed by property owners.

Rochester, N. Y.—New system of lighting will possibly be installed after Central ave. bridge is completed for lighting bridge.

Salamanca, N. Y.—Proposition to buy 135-hp. gas engine and 100-kw. generator for use in municipal plant has been voted for.

Youngstown, O.—City is considering installation of lights on Federal st.

Chalfont, Pa.—Citizens are urging adoption of electric light for streets.

Rogersford, Pa.—Council has decided to submit question of municipal light plant to vote at November election, and indications are that there will be big majority in favor of it.

Lincoln, R. I.—Petitions have been received asking for street lights at Lincoln Park, Manville, and on Grant and Livingstone Sts., Prospect Hill.

Nashville, Tenn.—Franchise has been granted to Nashville Gas & Heating Co. for 40 years, giving company right to charge \$1.10 per 1,000 ft. for gas.

Denton, Tex.—New machinery, consisting of 200-KW. direct-connected generator and 300-HP. engine, will be installed in municipal light and power station, at cost of about \$10,000.

Newport News, Va.—Finance Committee of City Council has recommended to Council the appointment of committee of five to take up with Citizens' Railway, Light & Power Co. question of new and improved system of street lighting for city.

Sultan, Wash.—Clerk has been authorized to advertise for bids for a lighting system.

Wheeling, W. Va.—Board of Commissioners have made contract with Wheeling Electrical Co. to furnish current for lighting of County end of building.

Plymouth, Wis.—Amount of \$20,000 bonds will be issued for rebuilding electric light plant.

CONTRACTS AWARDED

Birmingham, Ala.—By city for furnishing electric lighting of streets and homes to Omusser Light & Power Co.

Los Angeles, Cal.—For placing electric generating plant in Hall of Records, to C.

C. Moore Engine Co., 321 Trust Bldg., Los Angeles, at \$21,000.

Hearne, Tex.—To O'Neil Engineering Co., Dallas, to construct electric light plant and water works; estimated cost is \$30,000.

Midland, Tex.—By City Council, for placing additional lights along main business thoroughfares, to Midland Light Co.

Pasco, Wash.—By City, for furnishing and installing ornamental street lighting posts along Lewis st., to R. Hammond, at \$4,098.20.

Spokane, Wash.—By City Commissioners, for 22 electroliers and 16 lamp brackets for Monroe st. bridge to Walton Machinery Co. for \$1,428. Price includes lamp posts and fixtures complete for installation.

Spokane, Wash.—By City Commissioners, for 10-ton gas motor for work on Lincoln Heights reservoir, to E. R. Jamieson & Co., at \$2,750.

Scott, Sask.—For construction of power house equipment, water works material, laying of mains, as follows: Power house, Gowe & Yeo; electrical apparatus and pumping machinery, Canadian Westinghouse Co.; pneumatic storage tanks, Polson Iron Works; hydrants, valves, etc., T. McAvity & Sons; water mains, Drummond McCall Co.; poles, Lindsey Bros.; line material, Northern Electric Co.; wire, Eugene Phillips Co.; erecting pole line, Fletcher & McGarvey; reservoir, Gowe & Yeo; laying mains, day labor; crude oil engine, Diesel Engine Co.

FIRE EQUIPMENT

Chico, Cal.—New auto chemical fire-engine will be added to fire department.

Folsom, Cal.—Committee has been appointed to install better fire protection.

Haywood, Cal.—Bond election will be held for voting on \$12,000 of bonds for purpose of installing fire-alarm system and erecting fire station, to cost \$8,000.

Colorado Springs, Colo.—City is contemplating purchase of auto fire apparatus.

Elgin, Ill.—Purchase of auto engine for local department is being considered.

South Bend, Ind.—Board of Public Safety will consider auto chemical for fire department, to cost \$6,500.

Boston, Mass.—High pressure system and automobile fire trucks have been recommended by E. F. Croker, former Chief of New York Fire Department.

Lynn, Mass.—Building Department has been authorized to prepare plans for a two-way brick fire house for the Highlands.

Ishpeming, Mich.—New fire hall will be erected on Lake st. facing Front and Pine sts.

Duluth, Minn.—Fire Department is in need of nearly mile of new hose, and Board of Fire Commissioners has authorized Secretary to advertise for 4,000 ft.

St. Paul, Minn.—Installation of automobile equipment for six additional companies has been recommended.

Billings, Mont.—New chemical fire engine will be purchased.

Asbury Park, N. J.—City is considering purchase of automobile hose wagon.

Elizabeth, N. J.—Board of Fire Commissioners are considering installation of fire alarm telegraph system.

Trenton, N. J.—Commissioner of Public Safety La Barre has decided to recommend to Commission purchase of 3,800 ft. of fire hose from United & Globe Rubber Co., and purchase of 1,500 ft. of hose from Empire Rubber Co., at price of 95c. a ft.

Huntington, L. I.—By majority, Huntington Fire District taxpayers have decided that village should have new fire house on Main st. in center of village. Proposition calls for appropriation of \$15,000 for purchase of site and erection of building.

Lockport, N. Y.—Resolution has been presented asking for appropriation of \$1,411 for removal and re-erection of fire alarm tower.

Lockport, N. Y.—Appropriation of \$16,500 is being considered for fire department improvements.

Syracuse, N. Y.—Purchase of 1,000 ft. of hose has been recommended.

Portland, Ore.—Fire Department recommends erection of eight engine houses to be located in various parts of city.

Franklin, Pa.—City is considering purchase of motor fire truck.

Lebanon, Pa.—Appropriation of \$1,000 is being considered for erection of new engine house.

Mt. Penn., Pa.—Fire alarm system will be installed.

Orland, Pa.—Erection of fire house to cost \$3,000 has been authorized.

Telford, Pa.—Fire department will purchase 500 ft. of fire hose.

Woonsocket, R. I.—Common Council has authorized appropriation of \$1,500 for repairs to No. 1 and No. 2 steam fire engines.

Sumter, S. C.—Citizens favor purchase of combination automobile chemical engine and hose wagon, or combination pumping engine and hose wagon.

Sioux Falls, S. D.—Fire department will spend \$17,000 for better fire protection.

Baird, Tex.—Bonds value \$3,000 will be issued for erection of new fire station.

Dallas, Tex.—City Commission has voted to purchase Webb automobile fire engine to be located at Oak Cliff station.

Waco, Tex.—Fire Commissioners will recommend appropriation for building fire station in North Waco.

Guyandotte, W. Va.—Erection of fire station has been decided on.

CONTRACTS AWARDED

Wilmington, Del.—By City, to Fabric Fire Hose Company, for 250 ft. of hose and to Gutta Percha Fire Hose Company for same amount.

Indianapolis, Ind.—For furnishing fire apparatus as follows: Squad wagon, to Meridian Auto Company, representing Packard Motor Car Company, \$5,277.40; ladder truck to Mais Motor Truck Company, \$4,800; combination hose and chemical truck and pump engine, capable of pumping 600 gals. of water a minute, to American-La France Engine Company, \$5,500, and \$7,500, respectively.

Passaic, N. J.—By City, to Gamewell Fire Alarm Telegraph Company, for new fire alarm system, at \$21,750.

Dunkirk, N. Y.—By City, for erection of fire hall in Eagle st., to B. F. Aldrich, at \$14,830.75.

Sherwood, N. D.—By City, to Watrous Engine Works, of St. Paul, for gasoline engine, hose carts, hose, etc., for \$2,630.

Caddo, Okla.—By City, to J. M. Dashiell, representing the Voorhees Rubber Mfg. Co., Jersey City, N. J., for 1,000 ft. of fire hose.

Wheeling, W. Va.—Bids for construction of new chemical engine house were all too high, and bids will probably be advertised for again.

Random Lake, Wis.—By Fire Department, to Howe Engine Co., of Indianapolis, Ind., for new hook and ladder wagon.

BIDS RECEIVED

Springfield, Ill.—For furnishing 1,500 ft. of fire hose and 400 ft. of chemical hose: C. C. C. Fire Rubber Hose Company, Canton, Ohio; Independence chemical, 36c.; Patriot chemical, 25c.; Multiple fire hose, 90c. Eureka Fire Hose Manufacturing Company, Chicago; Paragon fire hose, \$1.10; Red Cross, \$1; Helmet, 85c. Gutta Percha Rubber Manufacturing Company, Chicago; Baker fabric multiple, \$1.10; Princeton, \$1; Maltese Cross, 85c. Manhattan Rubber Company, Chicago; Multiple, \$1; Economy, 95c.; chemical hose, \$32. J. L. Hudson Company, Springfield; Rescue, 84c.; Princeton, 95c. New York Belting & Packing Company, Chicago; Solid woven, \$1; Vulcan, 90c.; chemical, 35c.

Newark, N. J.—For construction of fire-house at Avon ave. and S. 12th st., as follows: Thomas J. Mackinson & Co., \$34,490; Frederick Fatzler & Co., \$34,758; Enos Willetts, \$37,744; W. H. Connolly Company, \$38,875; Industrial Engineering Company, \$39,422; J. & J. Moreland Co., \$42,710, and the Merrick Fireproofing Company, \$43,900.

Seattle, Wash.—For furnishing 20,000 ft. of fire hose, as follows: Boston Woven Hose & Rubber Company, \$11,600; P. C. Fire Supply Company, \$11,800; Bowers Rubber Company, \$11,800; Caldwell Machinery Company, \$12,200; Eureka Fire Hose Manufacturing Company, \$13,400; Gorham-Revere Rubber Company, \$13,580; Diamond Rubber Company, \$13,600; American Rubber Company, \$13,950; Fabric Fire Hose Company, \$14,600.

BRIDGES

Haddam, Conn.—Bridge Commission is considering employing engineer to make preliminary surveys for bridge to span Connecticut River from Haddam to E. Haddam.

Tampa, Fla.—Board of Public Works has approved of revised plans for new bridge across Hillsborough river at Lafayette st., as proposed by Consulting Engineer Boller, of Boller & Hodge.

Augusta, Ga.—Plans for wood-block flooring for steel bridges are being prepared, and bids will shortly be advertised for.

Greensboro, Ga.—Election will probably be called for voting on \$75,000 bond issue for erection of steel bridges over Oconee River.

Boston, Mass.—City will borrow \$2,885,000 for public improvements; \$250,000 of which will be used for Chelsea bridge.

Omaha, Neb.—City Council is considering construction of viaduct along Nicholas st., from 13th to 16th.

Trenton, N. J.—Bridge Committee of Board of Freeholders has decided to have County Engineer Epple prepare plans and specifications for bridge over water power at River Drive ave. and present same at November meeting.

Reading, Pa.—Berks County Court has authorized loan of \$475,000 to pay for Penn st. bridge.

Fort Worth, Tex.—Resolutions have been passed ordering surveys for four bridges proposed in \$600,000 bond issue.

CONTRACTS AWARDED

Fairfield, Cal.—By Board of Supervisors, to Gildersleeve Construction Co., of Napa, for construction of concrete bridge across Ullis Creek, in Vacaville Township, at cost of \$3,325.

Los Angeles, Cal.—For constructing bridges as follows: To Mercereau Bridge Construction Co., of Los Angeles, for 3 reinforced concrete bridges, Nos. 21, 22 and 23, for a total of \$10,870; and same company for concrete bridges, Nos. 38, 15 and 16, at \$6,000, \$4,500 and \$2,000, respectively; and to Petterson & Schmidt, of Los Angeles, for reinforced concrete bridges, Nos. 26 and 37, at \$5,445 and \$1,800, respectively.

Yreka, Cal.—For construction of cement bridge across Humbug Gulch on Oregon St., to W. A. Reed, at \$1,385.

Madison, Fla.—By Commissioners of Madison and Hamilton counties, for construction of steel bridge across Withlacoochee river, to Converse Bridge Co., of Chattanooga, Tenn., at \$4,297.

Chicago, Ill.—For constructing substructure and superstructure of bridge over north branch Chicago River, to National Contracting Co., Security Bldg.; cost, \$29,000.

Shermerville, Ill.—For bridge work along route of Des Plaines Valley Ry., to Crowley-Salisbury Construction Co.

Vincennes, Ind.—By County Commissioners, for construction of 3 bridges, to Vincennes Bridge Co., at \$1,960.

Barbourville, Ky.—By Fiscal Court, for construction of two large steel bridges across Stinking Creek, to Brackett Bridge Co., of Cincinnati.

Bermuda, La.—For constructing steel highway bridge over Cave River, at Bermuda, (a) tubular piers, (b) concrete piers, to Austin Bros., (a) \$8,400, (b) \$8,600. Other bids: J. I. Boggs, (a) \$8,435, (b) \$8,675; Midland Bridge Co., (a) \$8,439, (b) \$8,762; F. H. Alsberry Co., (a) \$8,460, (b) \$8,700; M. S. Hasie, (a) \$8,547, (b) \$8,798.

Natchitoches, La.—For construction of traffic bridge across Cane river at Bermuda to Austin Brothers, of Dallas.

Fall River, Mass.—For constructing 82.5-ft. clear span reinforced concrete arch bridge, 43 ft. wide, with two 7-ft. walks and 25-ft. driveway, to be erected at South Park, to Beattie & Cornell, Fall River, at \$22,600.

Reno, Nev.—By Washoe County Commissioners, for building of new steel bridge over Truckee River, to A. F. Neldt, of Reno, at \$10,645, and substructure, to Canton Bridge Co., at \$3,150. Other bidders were Jenkins & Wells Co. and the Reno Construction Co.

Toledo, O.—By City, for construction of bridge in Walbridge Park, to Wyandotte Cement Co., Ohio Builders' Supply Co., Toledo Stone & Glass Sand Co., and Acme Builders' Supply Co., at \$4,500.

Portland, Ore.—For erecting 1400-ft. viaduct across Southern-Pacific tracks into Reed Institute grounds, to Pacific Bridge Co., at \$70,000.

Spokane, Wash.—By City, for electroliers on Monroe st. bridge, to Walton Machinery Co.

MISCELLANEOUS

Bessemer, Ala.—City Council is discussing improvements which must be made to city jail as required by State Inspector.

Red Bluff, Cal.—Plans have been accepted for erection of court house buildings, to cost from \$200,000 to \$500,000.

Sacramento, Cal.—Members of State Highway Commission will purchase seven-passenger automobile which they will use in making tour of State to map out route for highways to be built under the \$18,000,000 bond issue.

Woodland, Cal.—Supervisors are discussing proposed bond issue of \$360,000 for construction and furnishing of new court house and jail.

Brooksville, Fla.—Board of County Commissioners is considering plans for erection of court house, to cost about \$45,000.

Quincy, Fla.—County Commissioners have decided to issue \$50,000 worth of bonds to erect up-to-date modern court house.

St. Augustine, Fla.—County Commissioners have purchased a mound of shells from which hundreds of cars can be shipped at cost of \$28 per car.

Indianapolis, Ind.—Committee on Public Improvements of City Council has decided to recommend ordinances authorizing sale of police and fire headquarters and engine house No. 13.

Kokomo, Ind.—Howard County Commissioners have decided to co-operate with city of Kokomo in experiment of establishing market house.

Muncie, Ind.—City Council is considering location for erection of proposed city market.

Carlisle, Ky.—Erection of City Hall to cost \$10,000 has been authorized.

Bangor, Me.—Bangor Railway & Electric Co. will replace wooden dam at Veazie with concrete structure.

Boston, Mass.—City will borrow \$2,885,000 for public improvements; \$120,000 of which will be used for erection of municipal building in So. Boston.

New Bedford, Mass.—Proposition to secure combination auto ambulance and patrol wagon for Weld st. police station is being considered.

Taunton, Mass.—Committee has been appointed to investigate cost of installing police signal system.

Winchester, Mass.—Bids will be received October 23 for \$90,000 park bonds.

Grand Rapids, Mich.—Joseph P. Rusche submitted lowest bid for dock wall, his bid being \$12,065.

Kalamazoo, Mich.—Municipal improvements to cost nearly \$250,000, have been planned, including erection of city hall, newly equipped police station, etc.

Buffalo, N. Y.—Bids will shortly be advertised for erection of new building at the Zoo to cost about \$100,000.

Mineola, L. I., N. Y.—Election will be held in November, and proposition to raise \$60,000 for poor house building at Brookville from North Hempstead and Oyster Bay will be voted on.

Utica, N. Y.—Board of Public Works is considering site for contemplated tuberculosis pavilion.

Cincinnati, O.—Bids have been rejected for rebuilding of city crematory and City Clerk will readvertise.

Cleveland, O.—City Hall Commission has resolved to issue \$1,100,000 of the \$2,000,000 authorized city hall bonds at once.

Toledo, O.—Finance Committee of Council has approved resolution to appropriate \$1,000 to determine ways and means of diverting course of Swan Creek.

Warrensville, O.—Public Safety Department will have to readvertise for bids on model dairy barn on infirmary farm at Warrensville or else \$3,000 must be allowed

for building by Council. Estimated cost was \$10,000, but lowest bid received amounted to \$13,000.

Youngstown, O.—Bond issue for \$20,000 for improvement of parks has been passed.

Muskogee, Okla.—City Council has voted to appropriate money for municipal building at Muskogee fair.

Providence, R. I.—Common Council has approved of resolution providing for hiring of \$100,000 for public comfort station, and appropriation of \$15,500 for comfort station at junction of Weybosset and Mathewson Sts.

Jonesboro, Tenn.—County Court of Washington County has authorized issuance of \$50,000 in bonds, proceeds of which will be used to build court house.

Brownsville, Tex.—Voters have decided in favor of \$230,000 jail bond issue.

El Paso, Tex.—Bonds of City to amount of \$814,000 have been sold at private sale to Commercial Bank and Trust Co. in Kansas City. \$294,000 worth of bonds are refunding bonds and \$50,000 are school bonds.

Newport News, Va.—Finance Committee has recommended appropriation of \$5,000 for new general hospital on 50th st.

Olympia, Wash.—Plans by George Gove for new city hall have been accepted and old city hall sold to Fred. W. Stoderling for \$10,000.

Spokane, Wash.—City Commissioners have purchased Marion steam shovel for \$3,500, without bids.

Milwaukee, Wis.—At meeting of Special Harbor Committee question of asking council to pass a \$40,000 bond ordinance to begin work on new harbor was laid over for two weeks.

Racine, Wis.—Common Council is considering improvements at Washington Park, Horlick Park and Riverside Park.

CONTRACTS AWARDED

Las Animas, Cal.—For construction of dam and canals, to De Remer & Oleson, of Denver. Firms bidding were: W. A. Colt & Sons, John D. Brown, Abendschan & Gudel, Murphy Bros., Banta Bros., and F. J. Beck, of Las Animas; De Remer & Oleson, Clinton Construction Co., and Knowlton Construction Co., of Denver; Fox & Smith, of Florence; Wogan Construction Co. and

Ord & Co., of Alamosa; H. S. Calahan Bros. and Moore Bros., of Kansas City; R. C. Clough & Sons, of Colorado Springs, and Municipal Construction Co., of Kansas City.

San Francisco, Cal.—By Board of Public Works, for City and County Hospital equipment as follows: Laundry plant to the Troy Laundry Machinery Company, \$14,994; ice making plant, Vulcan Iron Works, \$13,389; steam, gas and water piping, Central Electric Plumbing and Heating Company, \$19,450; sterilizers for powerhouse and laundry, Speck Manufacturing Company, \$3,400; disinfectors, John G. Sutton Company, \$1,580. For constructing safety station at junction of Market, McAllister and Jones sts., to L. H. Westdahl, for \$1,929, and that for removing temporary Girls' High School building to Hamilton square, to William Bruce, for \$4,750.

Waterbury, Conn.—By Board of Public Works, for retaining wall on Baldwin st., to Young Concrete & Construction Co., at \$1,055.

Boone, Ia.—To Anderson & Co., for joint county drain, at \$26,107.36. Other bidders were as follows: Nels Damsgaard, Anderson & Co., Nelson & Jackson, Thorngren & Michels, William Braker, Jesse A. Fisher, Moeller Bros., Hawkeye Construction Co., W. L. Stewart, E. T. Lizenby, Anton Johnson, W. A. DeLong, H. C. Fiscus, O. Anderson, J. H. Zenor, W. P. Stewart, Hans Burkland, E. S. Thorngren, Arthur McHose, St. James Tile Mfg. Co., Two-Good Construction Co., Iowa Pipe & Tile Co., Sac City Cement Pipe Co., Monmouth Mining & Manufacturing Co., and Plymouth Clay Products Co.

Elwood, Ind.—By City, for erection of incinerator, to J. H. Wagner, of firm of Decker, Miller & Wagner.

New Albany, Ky.—By County Commissioner, painting 24 bridges, to N. Borman, Franklin Township, at \$15.50 each.

Detroit, Mich.—By Public Lighting Committee, for steel rails to complete tracks on Atwater st., to Pennsylvania Steel Co.

Litchfield, Minn.—By Board of County Commissioners, for erection of new county jail building, to J. H. Olsen, of Willmar, at \$5,577.

Hoboken, N. J.—By Council, for rebuilding city hall, to Paul J. Exner Co., at \$114,600.

TOO LATE FOR CLASSIFICATION

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
STREET IMPROVEMENTS				
New York	New York	Oct. 18, 11 a.m.	Paving with granite and asphalt and laying sidewalks.	A. E. Steers, Pres. Boro. B'klyn.
Ohio	Painesville	Oct. 21, noon	Constructing track.	Lake County Agricultural Society.
Pennsylvania	Olyphant	Oct. 23, 8 p.m.	Improving driveways, walks, etc., about Borough building.	J. I. Kicullen, President.
New York	New York	Oct. 26, 3 p.m.	Furnishing Hudson River gravel.	C. B. Stover, Pres. Park Comrs.
Pennsylvania	Emsworth	Oct. 26, 4 p.m.	Grading, curbing and paving Hazelwood Avenue.	Borough Engineers.
Florida	Jacksonville	Oct. 27, 10 a.m.	Paving roads with asphalt macadam and improving with other materials.	Gail Barnard, County Engineer.
Ohio	Cleveland	Oct. 27, noon	Paving with brick.	A. B. Lea, Director Public Service.
New York	New York	Oct. 26, 3 p.m.	Constructing asphalt tile sidewalk.	C. B. Stover, Pres. Park Comrs.
Florida	Pensacola	Nov. 7, noon	Constructing 180,000 sq. yds. brick, asphalt, bitulithic, wood or concrete paving; 116,000 ft. concrete curb.	J. A. Merritt, Chm. Bond Trustees.
Alabama	Camden	Nov. 7, 1 p.m.	Constructing 3 miles gravel road.	County Commissioners.
Indiana	Lafayette	Nov. 8, 10 a.m.	Constructing gravel road.	G. W. Baxter, County Auditor.
Alabama	Scottsboro	Nov. 8, 11 a.m.	Macadamizing 2.7 miles road.	County Commissioners.
SEWERAGE				
Missouri	St. Joseph	Oct. 21, 10 a.m.	Constructing sewer in District 67.	Alfred Meier, Pres. Bd. Pub. Wks.
Pennsylvania	Emsworth	Oct. 26, 4 p.m.	Constructing 1,120 ft. 8-in. clay pipe and sewer appurtenances.	Borough Engineers.
Kentucky	Louisville	Oct. 20, noon	Constructing sewerage contract No. 85.	P. L. Atherton, Chm. Comrs. Sewage.
Ohio	Akron	Oct. 25, noon	Constructing storm water sewer.	J. W. Gauthier, Dir. Pub. Service.
Ohio	Dayton	Oct. 27, noon	Constructing sewer connections.	J. C. Ely, Dir. Pub. Service.
West Virginia	Huntington	Nov. 1, 1 p.m.	Constructing 12 to 18-in. lateral sewer.	Board Commissioners.
WATER SUPPLY				
Arkansas	Marked Tree	Oct. 20, 10 a.m.	Constructing water works and sewers.	M. W. Hazel, Secy. Imp. Dist.
West Virginia	Northfork	Oct. 23, 4 p.m.	Constructing two 50,000 gallon water tanks.	R. R. Roberts, Mayor.
Oklahoma	Braggs	Oct. 24, 8 p.m.	Constructing water works plant.	J. J. Johnson, Clerk.
Louisiana	Loreauville	Nov. 15	Constructing wooden tower and tank.	Paul Bassin, Tax Collector.
BRIDGES				
Oregon	Dalles City	Oct. 24, 10 a.m.	Constructing bridge across Deschutes River.	A. E. Lake, County Judge.
Michigan	Saginaw	Oct. 27, 7 p.m.	Constructing bridge across Saginaw River.	W. F. Jahnke, City Clerk.
Virginia	Surry	Oct. 28, noon	Constructing bridge over Blackwater River.	P. St. J. Wilson, State Hwy. Com.
Virginia	Wise	Oct. 31, 11 a.m.	Constructing number of bridges.	County Supervisors.
Virginia	Jonesville	Nov. 3	Constructing 7 bridges.	P. St. J. Wilson, State Hwy. Com.
Kansas	Leavenworth	Nov. 6	Constructing culverts and repairing bridges.	J. Hall, County Clerk.
LIGHTING AND POWER				
Michigan	Grand Rapids	Oct. 19, 8 p.m.	Furn. 32,000 ft. No. 6 lead covered cable.	E. H. Christ, Pres. Bd. P. Wks.
MISCELLANEOUS				
New York	New York	Oct. 19, 3 p.m.	Constructing wrought iron fence.	C. B. Stover, Pres. Park Comrs.
New York	New York	Oct. 19, 10 a.m.	Furnishing automobile.	R. Waldo, Police Commissioner.
New York	New York	Oct. 24, 10:30 a.m.	Furnishing 2 motor wagons.	Jos. Johnson, Fire Commissioner.
Ohio	Cleveland	Oct. 27, noon	Building bath house.	A. B. Lea, Dir. Pub. Serv.
Ohio	Cleveland	Oct. 30, noon	Furnishing portable asphalt mixing plant.	A. B. Lea, Dir. Pub. Service.

STREET IMPROVEMENTS

Marysville, Cal.—Supervisors of Yuba County will make extensive improvements on one of main roads leading into Marysville.

Oroville, Cal.—Three and a half miles of new paved sidewalks will be laid.

Oroville, Cal.—Supervisors have appointed committee to work in conjunction with Supervisor Porter in securing State road for east side of Sacramento Valley.

Pasadena, Cal.—Supervisors have been asked to urge on State Highway Commission to adopt foothill boulevard as route of State highway to connect county seats.

Colorado Springs, Col.—Colorado Springs Park Commission has decided to build new scenic road through famous Garden of the Gods, which promises, when completed, to be one of most attractive in Pike's Peak region. The new road will extend mile and one-half along ridge, and from it unique view of entire garden may be obtained.

Lewiston, Idaho.—Council has passed resolution adopting Hassam pavement for 8th st. in Normal Hill residence district.

Marion, Ind.—Board of Works has authorized repair of sidewalks on W. First St.

Mishawaka, Ind.—Board of Public Works will pave alleys from 4th to Front st., also alley between Main and Church st. from 4th to Front.

Baltimore, Md.—City will resurface about 1½ miles of residential streets, and bids for same will shortly be advertised. Resurfacing will be done with sheet asphalt over cobble already laid.

Bayonne, N. J.—Two petitions have been favorably considered by City Council, one for paving of Avenue E between 40th and 52d Sts., with bitulithic pavement, and other for paving thoroughfare from 14th St. to 8th St. and Broadway.

Elizabeth, N. J.—Bond issue of \$500,000 for street improvements is being considered.

Jersey City, N. J.—Street and Water Board have sent request to Board of Finance for additional appropriation of \$11,000 for street cleaning purposes. The appropriation is \$50,000, but lowest bid for work, made by Henry Byrne, is \$61,000.

Mt. Holly, N. J.—Election will be held for voting on issuance of \$25,000 of bonds for making roadway improvements along Broad, Garden and Pine Sts. and business section of Mill St. and Madison Ave.

Paterson, N. J.—Bids have been opened by Park Commission for laying of curbs and sidewalks around park property owned by city.

Schenectady, N. Y.—Ordinances have been adopted for paving of Winston pl. and laying of sidewalk on Hagaman st.

Schenectady, N. Y.—Widening of Lafayette st. is being discussed.

Utica, N. Y.—Following public improvements have been authorized: Pavement in Wurzel ave., from Miller rd. to North Genesee st., at \$19,192.33; pavement in North Genesee st., from northerly overcrossing approach to Mohawk River, at \$21,888.57; repaving in Park ave., from about 120 ft. south of Hopper st. to 50 ft. south of Hopper st., at \$470; repaving Oneida st., from Oneida sq. to north line of James st., at \$12,463.80; pavement in Root st., from Catharine st. to Erie Canal, at \$1,189.57.

Toledo, O.—City Council has approved ordinance to pave St. Clair St. from Emerald Ave. to Monroe St.

Youngstown, O.—Bond issue for \$9,000 has been passed to make necessary repairs to streets and bridges.

Harrisburg, Pa.—Ordinances have been passed authorizing paving of Albert alley, from 15th st. to 16th st.; Miller st., from 13th st. to 15th st., and Liberty alley, from 15th st. to 16th st.

McKeesport, Pa.—Ordinance has been passed authorizing grading, curbing and paving of Hartman St., from 5th Ave. to city line.

Columbia, S. C.—Petition has been received by City Council asking for paving of Laurel St. between Assembly and Pickens Sts.

CONTRACTS AWARDED

Los Angeles, Cal.—By County Board of Supervisors, for improving portions of La Conada-Verdugo Rd., to John W. Polcaro, 212 Stimson Bldg., for \$36,728.

Long Beach, Cal.—To Fairchild, Gilmore, Wilton Co., for improving Pacific, Cedar, Chestnut and Magnolia Aves., at 16 cts. per sq. ft. for asphalt paving on broken stone base, 20 cts. per sq. ft. for cement gutters; also for paving the alleys in block 114 at 14.8 cts. sq. ft. for asphalt.

Santa Monica, Cal.—To Fred. H. Stout, Bradbury Bldg., Los Angeles, for improving 7th St. from Nevada St. to south city limits at 10 cts. per sq. ft. for 250,000 sq. ft. of oil macadam paving, and 33 cts. per lin. ft. for 12,000 ft. of cement curb; total, \$30,000.

Wilmington, Del.—For paving, to Harrigan Construction Co., of Wilmington, for \$29,757.

Augusta, Ga.—For repaving trenches on Broad St., to Georgia Engineering Co.

Cedar Rapids, Ia.—By City Council, for paving as follows: 5,520 sq. yds. block paving on portions of 4th, 6th and 7th aves., to Dearborn & Jackson, of Cedar Rapids, for \$9,326; for concrete paving in various alleys, to M. Smith, at \$4,885.

Rochester, N. Y.—By Board of Contract and Supply as follows: Frost Ave. brick pavement, Whitmore, Rauber & Vicinus, \$5,734; South Ave. walks, C. E. Maselli, \$1,169; Rutter St. walks, C. E. Maselli, \$521.50; Pinnacle Rd. walks, C. A. Maselli, \$350.50; dwelling house at Cobb's Hill Reservoir, George B. Garrison, \$5,594.

Utica, N. Y.—By Board of Contract and Supply, for constructing artificial stone sidewalks on approaches to new central fire station, consisting of 1,800 sq. ft. on Elizabeth st., at 19c. a sq. ft.; 1,875 sq. ft. on Burnet st., at 16c. a sq. ft., and 810 sq. ft. on Post st., at 19c. a sq. ft., to N. D. Peters & Co.

Dayton, O.—By Board of Control, for improving Haller St., to Hecker & Kirschner, at low bid of \$2,225.

Harrisburg, Pa.—By city, for grading Cumberland St., to A. A. Thumma, at \$1,250.

Pittsburgh, Pa.—By city, for raising streets in West End, to James H. McQuade Co., at \$137,015.10.

Huntington, W. Va.—By Commissioners, for paving 31st St., to Harrison & Dean, and for paving alley between 10th and 12th Sts., and 5th and 6th Aves., to Freshwater & Sons.

SEWERAGE

Barnesville, Ga.—Citizens' Bank of Barnesville has been awarded \$50,000 bond issue recently authorized for purpose of extending sewerage system, enlarging electric light and water plant and building \$35,000 addition to Gordon Institute.

Gilbert, Minn.—Council will expend \$8,203.69 for completion of sewerage system.

St. Joseph, Mo.—Ordinances have been passed to provide for construction of sewer, together with all necessary manholes, combined inlets and catchbasins in portions of sewer districts Nos. 109, 104, 61, 55, 93 and 48.

Summit, N. J.—Common Council and Millburn Township Committee have approved plans by City Engineer Stiger and Engineer Halsey, of Millburn, for sewer system to be constructed in Brantwood section of Millburn and this city. Cost of sewer is to be borne equally by two municipalities.

Newburgh, N. Y.—Council has ordered public hearing for Nov. 7 on petition for sewer in 1st St. from Prospect St. west, to connect with trunk sewer in Fullerton Ave., and City Engineer will prepare plans and estimate of cost.

Harrisburg, Pa.—Ordinances have been passed providing for construction of terra cotta pipe sewers in various streets.

Scranton, Pa.—Election will be held Nov. 7 for voting on increasing indebtedness of city in sum of \$275,000, for purpose of constructing and reconstructing sewers in various districts.

Nashville, Tenn.—City Council has passed Second Ward sewer bill, and other sewer bills have passed second reading.

CONTRACTS AWARDED

Binghamton, N. Y.—By Board of Contract and Supply, for constructing sewers in Tompkins and Liberty Sts., to J. J. Tyne, and sewer in Sheldon St., to George Pignatello. Following are the bids: J. J. Tyne, Sheldon St., \$716.88; Tompkins St., \$1,961.59; Liberty St., \$1,235.04. George Serifina, Sheldon St., \$665.54; Tompkins St., \$1,992.28; Liberty St., \$1,300. George Pignatello, Sheldon St., \$525; Tompkins St., \$2,100; Liberty St., \$1,317.30. Tumposky & Stente, Tompkins St., \$2,279.03; Liberty St., \$1,497.38.

Dayton, O.—By Board of Control, for constructing sewers in sewer district No. 3 on Ohio, Grant, Chapel and Light Sts., Saturday to Shafer & Dill, at their bid of \$914.

Milwaukee, Wis.—By city, for laying sewer in Grand Ave. extension, to George E. Zimmerman, at \$13,096.22.

St. Lambert, Que.—By Town Council, for construction of sewer on Front St., for about \$13,330.

WATER SUPPLY

Hartford, Conn.—Installation of high water pressure system is being discussed.

Cumberland, Md.—Bids will be received until 8 p. m., Oct. 23, by Roderic Clary, Commissioner of Finance, for purchase of \$100,000 water improvement bonds.

Springfield, Mass.—Extensions of water mains have been ordered in 5 streets as follows: Massachusetts Ave., 100 ft. of 8-in. pipe; Nursery St., 50 ft. of 6-in. main; Cumberland St., 130 ft. of 8-in. main; Oxford St., 150 ft. of 6-in. main; Trinity Terrace, 250 ft. of 6-in. main.

Harrisburg, Pa.—Ordinance providing for placing of water pipe in Prospect St., from 23d and ½ St. eastward 300 ft.; 24th St., from Derry to Elder, and Mulberry, from 18th to Nelson, has been amended so as to include Green St., from Seneca to Schuylkill. It had been previously passed on third reading, but was recalled and later passed as amended on second reading.

CONTRACTS AWARDED

Springfield, Ill.—By city, for new artesian well at St. Charles, to Frank Timmons, of Chicago, at \$3 per ft. for first 1200 ft., and \$2.50 per ft. for remaining distance.

Wheeling, W. Va.—By Board of Control, for furnishing 8-in. steam pipe and condenser for engine at pumping station, to American Fdy. & Construction Co. and Allis-Chalmers Co. Bids were as follows: Steam line, National Valve & Manufacturing Co., \$1,869; American Foundry & Construction Co., \$1,466; Trimble & Lutz Co., \$1,732; R. W. Kyle Co., \$1,972.46. For best condenser bids were: Best Manufacturing Co., \$5,053, and Allis-Chalmers Co., \$3,138.

LIGHTING AND POWER

Marysville, Cal.—Main streets will be lighted with arches of electric light, doing away with drop arc lights.

New Britain, Conn.—Board of Public Works has voted to recommend to Common Council installation of number of new electric lights in various parts of city.

Jacksonville, Fla.—Ordinance is being considered for putting all wires underground, installing ornamental trolley poles, etc.

Barnesville, Ga.—Citizens' Bank of Barnesville has been awarded \$50,000 bond issue recently authorized for purpose of enlarging electric light and water plant, and other improvements.

Paxton, Ill.—Consumers' Electric Light, Heat & Power Co. proposes to put in \$75,000 plant in city. Ten-year contract and 30-year franchise.

Virginia, Minn.—City Council has passed resolution providing for special election Nov. 21 to vote upon proposition of whether



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GLAUBER BRASS MANUFACTURING COMPANY, Cleveland, O.



Dayton, O.—For Sanitary Sewer Dist. No. 4, being about 42 streets and alleys in eastern and southern portion of city as follows:

Items.	Quantity	Boyd & Cook. Price.	Hecker & Kirchner. Price.	Gephart & Kline. Price.	Larkin Bros. Price.	T. J. Backus Const. Co. Price.	J. R. Valentine. Price.	Waller-Diefendorf Co. Price.
8" Pipe Sewer, per lin. ft.	32,900	\$.19	\$.15	\$.22	\$.18	\$.22	\$.30	\$.19
10" Pipe Sewer, per lin. ft.	1,050	.30	.25	.27	.28	.28	.36	.25
0'-6' deep, per lin. ft. cut.	4,100	.20	.30	.24	.30	.27	.25	.38
6'-8' deep, per lin. ft. cut.	23,700	.30	.40	.35	.43	.40	.33	.49
8'-10' deep, per lin. ft. cut.	4,700	.44	.55	.60	.60	.55	.63	.59
10'-12' deep, per lin. ft. cut.	1,000	.70	.75	.75	.75	.75	.85	.79
12'-14' deep, per lin. ft. cut.	200	1.00	1.50	1.25	1.15	1.25	.94	1.05
14'-16' deep, per lin. ft. cut.	200	1.00	2.25	1.50	1.35	1.50	1.19	1.52
16'-18' deep, per lin. ft. cut.	100	1.50	3.00	2.00	1.75	2.00	1.30	2.27
Manholes, complete, each.	80	20.00	25.00	25.00	25.00	25.00	20.00	25.00
Lampholes, complete, each.	45	3.00	5.00	3.00	3.50	5.00	3.00	2.00
Flushtanks, complete, each.	43	30.00	45.00	40.00	30.00	45.00	45.00	30.00
Lead Pipe with Trench.	700	.40	.50	.45	.45	.50	.60	.30
Corp. Cocks and Specials.	43	5.00	10.00	9.00	5.00	9.00	7.00	7.50
Brick repaving per sq. yd.	50	1.50	1.50	2.00	2.00	2.00	1.80	1.60
Sheeting left in Tch. per 1,000 ft. B. M.	5,000	1.00	20.00	.....	.....	20.00	25.00	20.00
10" Cast Iron Pipe (lead joints) per lin. ft.	12	1.00	1.50	1.00	1.25	1.00	1.25	1.32
8" Cast Iron Pipe (lead joints) per lin. ft.	38	.80	1.25	1.00	1.00	1.25	.79	1.02
TOTAL.....	.....	\$21,456.40	\$25,473.00	\$25,827.50	\$26,012.50	\$27,360.50	\$28,112.02	\$28,135.60

City Council shall purchase water and light plant of Virginia Electric Light, Power & Water Co.

Albany, N. Y.—Public Service Commission for Second District has authorized Long Island Lighting Co. to exercise franchise granted by Town Board and Superintendent of Highways of town of Smithtown, in County of Suffolk, and has also authorized construction of electric plant and system within town of Smithtown, in accordance with terms of this franchise.

Little Falls, N. Y.—City is considering advisability of establishing municipal lighting plant.

Lonsdale, Tenn.—Council has granted franchise over 10 thoroughfares to Eastern Tennessee Power Co.

Nashville, Tenn.—City Council has passed gas franchise.

CONTRACTS AWARDED

Boston, Mass.—For installing electrical system in Trade School for Boys, to Edwin C. Lewis, for \$3,778.

Buhl, Minn.—By Village Council, for laying heating main, to Virginia Htg. & Plumbing Co. of Virginia, Minn., for \$19,600.

Columbus, O.—By City for furnishing 320 arc lamps to be used in extending municipal lighting system, to General Electric Co., at \$11,190.

FIRE EQUIPMENT

Waterloo, Ia.—Resolution has been adopted by City Council for purchase of motor fire vehicle.

Pleasantville, N. J.—Plans are being prepared for erection of fire house.

Erie, Pa.—Resolution has been passed authorizing Board of Fire Commissioners

to purchase new fire engine for No. 5 Engine House.

Williamsport, Pa.—Council has decided to advertise for bids for motor driven combination chemical and hose wagon.

CONTRACTS AWARDED

Columbus, O.—By City, for lead-covered underground cables for fire department alarm system, to John A. Robleing, of Cleveland, at \$1,600.

Wheeling, W. Va.—By city for erection of new chemical hose house on 11th st. to McDonald Bros., at \$7,974. Other bids as follows: J. W. Beltz & Sons Co., \$8,350, and N. C. Hamilton & Sons, \$8,925.

BRIDGES

Van Buren, Ind.—Bridge between Wells and Grant Counties, and crossing Black Creek, will be built at cost of \$1,839.

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LOCATION VALUE—In the Metropolitan Life Building, the most famous office building in the world, in the heart of the business district.

ADVERTISING VALUE—Think of the advantage of having on your stationery the address and telephone number of a branch office in New York and your name in the telephone directory.

CORRESPONDENCE VALUE—Messages—telephone, telegraph, or letter—will be intelligently and promptly attended to in accordance with your directions.

AGENCY VALUE—A competent, energetic business man will act as your personal representative in your absence.

PERSONAL VALUE—You have a private desk and a private office, handsomely furnished. No charge is made for telephone calls and stenographic service.

AN EXAMPLE—Many of our leaseholders have negotiated transactions in one week through our service which have more than paid for the whole year's rental.

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1 MADISON AVENUE, NEW YORK, U. S. A.

Norton, Kan.—County Commissioners have found it necessary to let contracts for 11 bridges.

Arlington, N. J.—Action has been taken by Arlington Board of Trade to push proposed new bridge to span Passaic between this city and Arlington.

Ocean City, N. J.—Plans are being prepared for proposed bridge over thoroughfare near 34th St.; estimated cost, \$2,500.

Springfield, O.—Ordinance has been passed by City Council authorizing issuance of bonds for construction of arch bridge over Indian Run at intersection with Broadway.

Erie, Pa.—Ordinance has been passed appropriating \$1,000 for repairing bridge over Mill Creek at 26th St.

CONTRACTS AWARDED

Burley, Idaho.—By Bridge Com. for constructing steel pile highway bridge across Snake River, near Burley, to Portland Bridge & Iron Co., of Portland, Ore., for \$17,289.

Owego, N. Y.—By City for constructing L-beam bridge at North Owego to Owego Bridge Co.

Youngstown, O.—For constructing bridge at Dewey ave. to Wymer-Harris Constr. Co. at \$11,000.

Reading, Pa.—To L. H. Focht & Son, Bear Bldg., for erecting Penn St. Bridge, at bid of \$195,000.

Westover, S. D.—To Federal Bridge Co. of Des Moines, Ia., for constructing piers for bridge over White River for \$4,800.

MISCELLANEOUS

Oroville, Cal.—Appropriation has been asked for erection of Federal Building.

Barnesville, Ga.—Citizens' Bank of Barnesville has been awarded \$50,000 bond issue recently authorized for purpose of building \$35,000 addition to Gordon Institute, extending sewerage system and enlarging electric light and water plant.

Louisville, Ky.—Bids were opened for work of doubling width of Louisville and Portland Canal, to cost about \$5,000,000; following bids were received: The Mansfield Engineering Co., of Indianapolis, \$1,237,374; Edward M. Graves, of Cleveland, O., \$1,200,077; the Henry Bickel Co., of Louisville, \$1,099,375; the Robert Grace Contracting Co., of Cleveland, O., \$1,063,152; the T. A. Gillespie Co., of Pittsburgh, Pa., \$1,089,054; the Ohio River Contracting Co., of Evansville, Ind., \$1,036,473. Lowest bid was that of Ohio River Contracting Co., and this firm will probably be recommended for contract.

Newark, N. J.—Common Council has authorized issue of bonds to purchase properties for public playgrounds.

Clifton, Tenn.—City park is projected for Clifton, to be built along water front. It will be some hundred yards long and 30 wide.

Nashville, Tenn.—Hospital Commission has considered bids for the new \$50,000 addition to City Hospital. While no contracts were let, it is reasonably certain that Geo. Moore & Sons will get brick work and carpentering, and that W. H. Peebles will get foundation work.

Waco, Tex.—By city, for furnishing gas and electric light to Waco Gas & Electric Co. for 10 years. City commissioners will cancel issue of \$250,000 worth of bonds voted for purpose of erecting municipal light plant.

CONTRACTS AWARDED

Tuscola, Ill.—For building Douglass County Court House to W. M. Allen Sons & Co., of Peoria, for \$110,900. Other bidders were: L. N. Cope, Decatur, \$113,390; J. L. Simmons, Chicago, \$118,450; J. N. Fairchild, Danville, \$117,965; Baird & Hoew, Urbana, \$129,113; J. P. Moorehead, Tuscola, \$123,000.

Rockwell City, Ia.—By Board of Supervisors of Calhoun County as follows: To Jolley Cement Tile Co., Jolley Ia., for Drains 161 and 162, \$1,922 and \$1,243 respectively; and to Sac City Cement Pipe Co., Sac City, Ia., all tile on line of drain No. 163 at \$11,760; and to F. R. Green, Lake City, Ia., for all labor on Drain 163 for \$6,943.82.

Baltimore, Md.—By Board of Awards for furnishing automobile for Water Engineer to Standard Motor Car Co., at \$1,800.

Columbus, O.—By City for purchase of 100 tons of asphalt to International Asphalt Co. & Union Oil Co.

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PROPOSALS

CATSKILL AQUEDUCT

Contract 75

New York, N. Y.

Sealed bids will be received by the Board of Water Supply, at its offices, seventh floor, 165 Broadway, New York, until 11 a. m., on Tuesday, October 31, 1911, for Contract 75, for the construction of the Bay Ridge conduit, a portion of the city pipe lines of Catskill Aqueduct, in the City Aqueduct Department and extending from the junction of Thirty-sixth street and Fifth avenue in the Borough of Brooklyn, New York City, in a generally south-westerly direction along Fifth avenue, Sixty-fourth street, Fourth avenue, Sixty-seventh street and Second avenue to Seventy-ninth street and through Seventy-ninth street to the Shore road. The work to be done includes the furnishing and laying of about 16,400 feet of 48-inch cast iron pipe, 36 feet of 36-inch cast iron pipe, valves and other appurtenances, together with maintenance for one year.

At the above place and time the bids will be publicly opened and read. Pamphlets containing information for bidders, and pamphlets of contract drawings can be obtained at the above address by depositing the sum of Ten Dollars (\$10) for each pamphlet. For further particulars see Information for Bidders.

CHARLES STRAUSS, Pres.,
CHARLES N. CHADWICK,
JOHN F. GALVIN,

Commissioners of the Board of Water Supply. (16-17)

SEWAGE SYSTEM, PUMPING AND DISPOSAL PLANTS.

Ligonier, Pa.

Sealed proposals will be received by the Ligonier Borough Council, at the Borough Office, until 8 o'clock P. M., Thursday evening, November 2, 1911, for furnishing the material and constructing a sewerage system, sewage pumping plant, and sewage disposal plant.

The system includes 32,380 feet of 6 in. to 15-in. vitrified pipe sewers with appurtenances. The pumping plant will consist of two 4 in. x 5-in. centrifugal pumps, electrically driven and controlled (or two 250 gallon per minute sewage ejectors with air compressors and motors), and a receiving chamber, pump pit, building, etc.

The purification plant will consist of sedimentation tanks, sprinkling filters, sludge bed, etc., designed to treat 200,000 gallons of sewage.

Bids will be received for the system and plant either separately or together.

Proposals must be addressed to the Secretary of Council, Ligonier, Pa., and must contain certified check for the sum of 5 per cent of the amount of the bid, payable to the Treasurer of Ligonier Borough.

Plans and specifications and blank forms of proposal may be obtained of the Secretary of Council or at the office of the Engineer. A deposit of \$25 on plans and specifications will be required.

The right is reserved to reject any or all bids.

Ligonier Borough Council.

IRA F. BRANT, Secretary.

F. H. SHAW, Reading, Pa., Engineer. (16)

FOR SALE—Second Hand TRANSITS and LEVELS

Guaranteed to be in first class condition.

Send for list and prices.

The ENGINEERING AGENCY, Inc.
(Est. 18 Years)

Monadnock Block, Chicago.

PROPOSALS

TRIPLE COMBINATION AUTOMOBILE CHEMICAL FIRE ENGINE AND HOSE WAGON.

Albuquerque, N. M.

Sealed bids will be received at my office at Albuquerque, New Mexico, until Monday, Nov. 6, 1911, at 8 P. M., for a triple combination Automobile Chemical Fire Engine and Hose Wagon. Engine must be of not less than 90 horsepower, six-cylinder, with capacity for carrying at least 1200 feet of 2½-in. hose, double steel body for carrying two separate lines of hose; equipped with chemical tank of at least 35 gallons capacity, with 200 feet of ¾-inch chemical hose attached, couplings to conform with pitch of thread now carried. And with a water-pumping capacity of not less than 700 gallons per minute. Rear wheels to be equipped with 4½ in. pneumatic dual tires. Same shall include all necessary equipment, such as tools, lamps, both portable and stationary; locomotive bell and horn, axes, ladders, to be of the regulation length and design; crowbar, door opener, nozzles, and it shall be of the self-cranking device.

Full specifications with lowest price should be placed in a sealed envelope marked "Proposals for Furnishing Motor-driven Fire Engine for the City of Albuquerque, New Mexico," and forwarded to the City Clerk of Albuquerque, New Mexico.

A certified check for the amount of \$500.00 is to accompany each and every bid.

No bid will be accepted nor proposals considered except as above stated.

The city reserves the right to reject any and all bids.

By order of City Council.

Dated October 2, 1911.

JOHN B. McMANUS,
City Clerk. (15-16)

NOTICE.—LIGHT-MAKING COMPANIES

Champaign, Ill.

The city of Champaign, Illinois, with a population of over 15,000, is in darkness. 154 Arc (Street) lights are shut down.

Propositions or Bids for Lighting the Streets of this City, for the period of ten (10) years with electricity, gas or gasoline are herewith solicited.

All Propositions or Bids must be presented to the Council of said City of Champaign, Illinois, on or before November 4, 1911.

The aforesaid City Council of Champaign reserves the right to reject any or all propositions or bids, or accept any bid or proposition, or any part of any bid or proposition.

WM. COUGHLIN, Mayor.

Nat. M. Woodward, City Clerk. (15-16)

BOOK NOTICE

Clarification of Sewage.—By Rudolf Schmeitzner. Translated by A. Elliott Kimberly. Cloth, 7½ x 5 in., illus., 15 + 114 pp. New York, The Engineering News Publishing Company; London, Constable & Company, Ltd., 1910, \$1.50.

This book is the result of a visit by the author to a number of the larger German clarification plants where preparatory devices constitute the entire treatment of sewage. The plants are discussed from an engineering standpoint, the chemical and bacterial phases of the question being but briefly mentioned, and the book is a critical review of the design of screens of various types of sedimentation tanks, of towers, and of methods of sludge removal and disposal at present in use in Germany.